TOSHIBA

FILE NO. 050-200122

SERVICE MANUAL

PLASMA DISPLAY MONITOR

50WP16A, 50WP16C
50WP16H, 50WP16R
50WP16EA, 50HP81

PRINTED IN JAPAN Oct.,2001 Ⓟ

13 Block and Schematic Diagrams

13.1. Schematic Diagram Notes

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

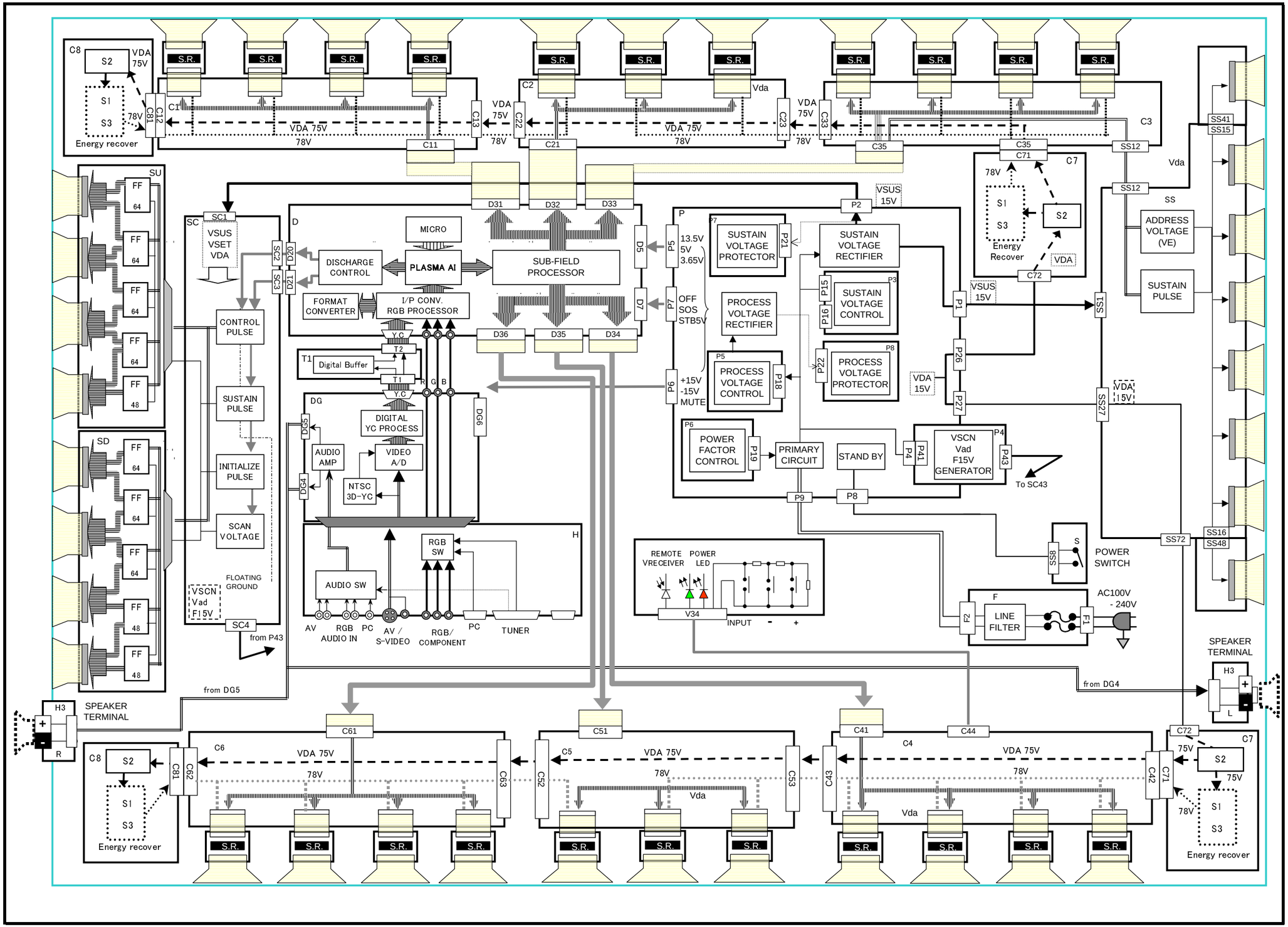
Notes:

1. **Resistor**
   All resistors are cabon 1/4W resistor, unless marked as follows:
   Unit of resistance is OHM [Ω] (K=1,000, M=1,000,000).
   - ◯ : Nonflammable
   - △ : Solid
   - ⊘ : Wire Wound
   - ⊠ : Metal Oxide
   - ◎ : Metal Film
   - ⊗ : Fuse**:**
2. **Capacitor**
   All capacitors are ceramic 50V capacitor, unless marked as follows:
   Unit of capacitance is μF, unless otherwise noted.
   - ⊗ : Temperature Compensation
   - Ⓜ : Polyester
   - ⓜ : Metalized Polyester
   - ⊠ : Polypropylene
   - +, NP : Electrolytic
   - NP : Bipolar
   - Ⓣ : Dipped Tantalum
   - Ⓩ : Z-Type
3. Coil
   Unit of inductance is μF, unless otherwise noted.
4. Test Point
   - ⚲ : Test Point position
5. Earth Symbol
   - ⏚ : Chassis Earth (Cold)
   - ⏚ : Line Earth (Hot)
6. Voltage Measurement
   Voltage is measured by a DC voltmeter.
   Conditions of the measurement are the following:
   - Power Source ..... AC 220V-240V, 50/60Hz (A, B and E Version)
     AC 120V, 50/60Hz (U Version)
   - Receiving Signal ..... Colour Bar signal (RF)
   - All customer's controls ..... Maximum positions
7. Number in red circle indicates waveform nember.
   (See waveform pattern table.)
8. When arrow mark (↗) is found, connection is easily found from the direction of arrow
9. Indicates the major signal flow. : Video ➡ Audio ⇨
10. This schematic diagram is the latest at the time of printing and subject to change without

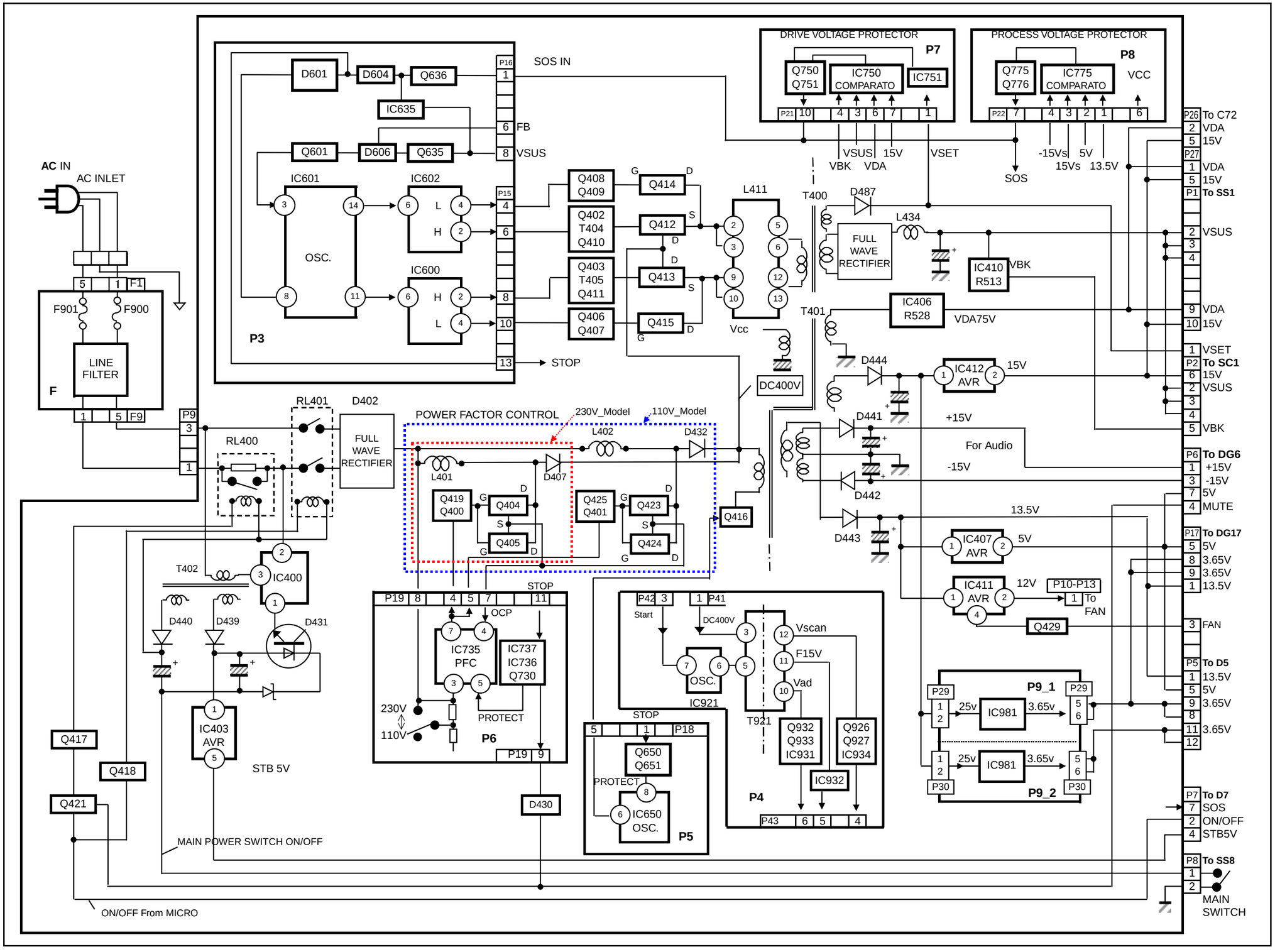
Remarks:

1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection.
   The circuit is defined by HOT and COLD indications in the schematic diagram. Take the follwing precautions.
   All circuits, except the Power Circuit, are cold.
   Precautions
   a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
   b. Do not short- circuit the hot and cold circuits or a fuse may blow and parts may break.
   c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.
   Connect the earth of instruments to the earth connection of the circuit being measured.
   d. Make sure to disconnect the power plug before removing the chassis.
2. Following diodes are interchangeable.
   MA150- MA162 (Replacement part)

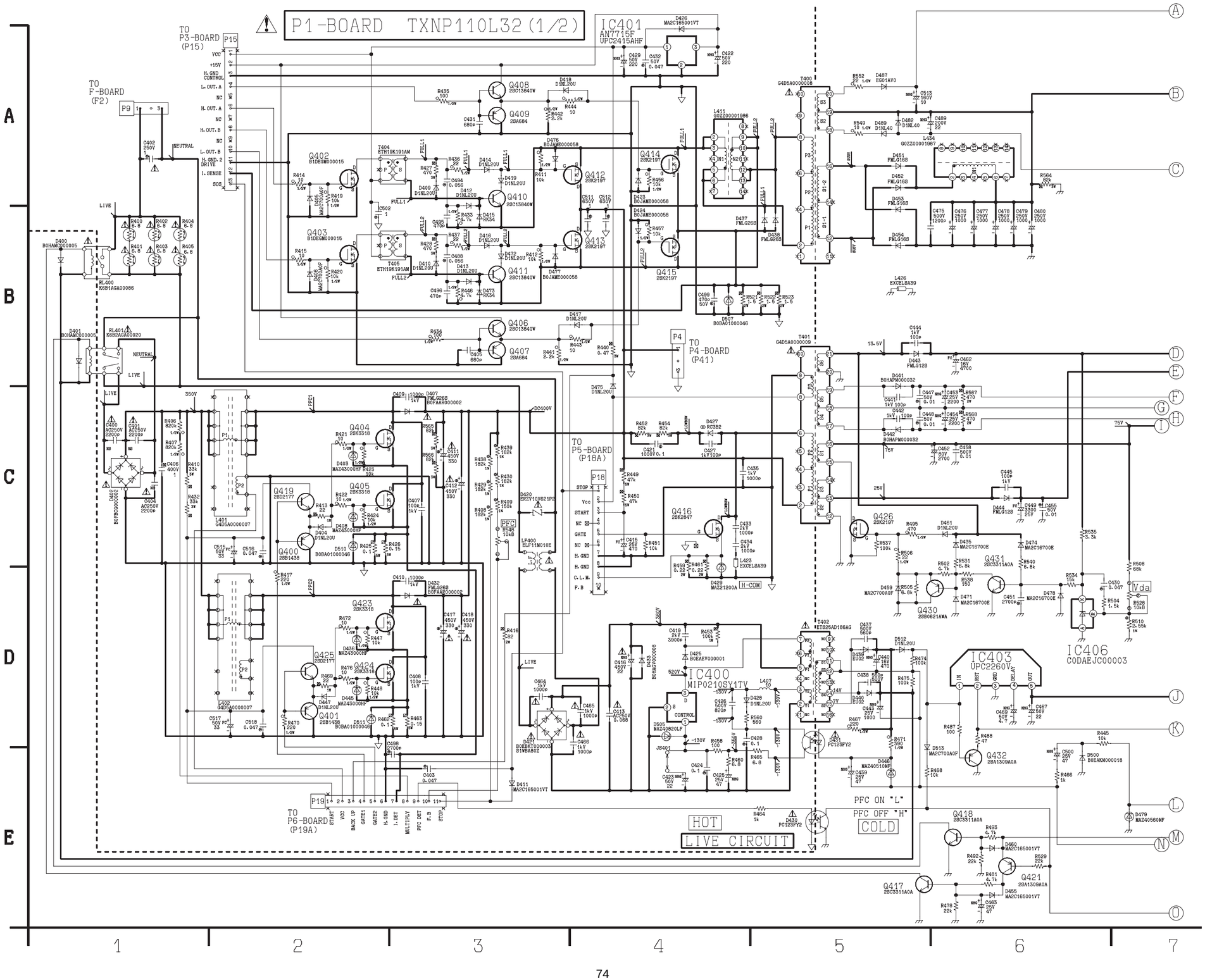
13.2. Main Block Diagram



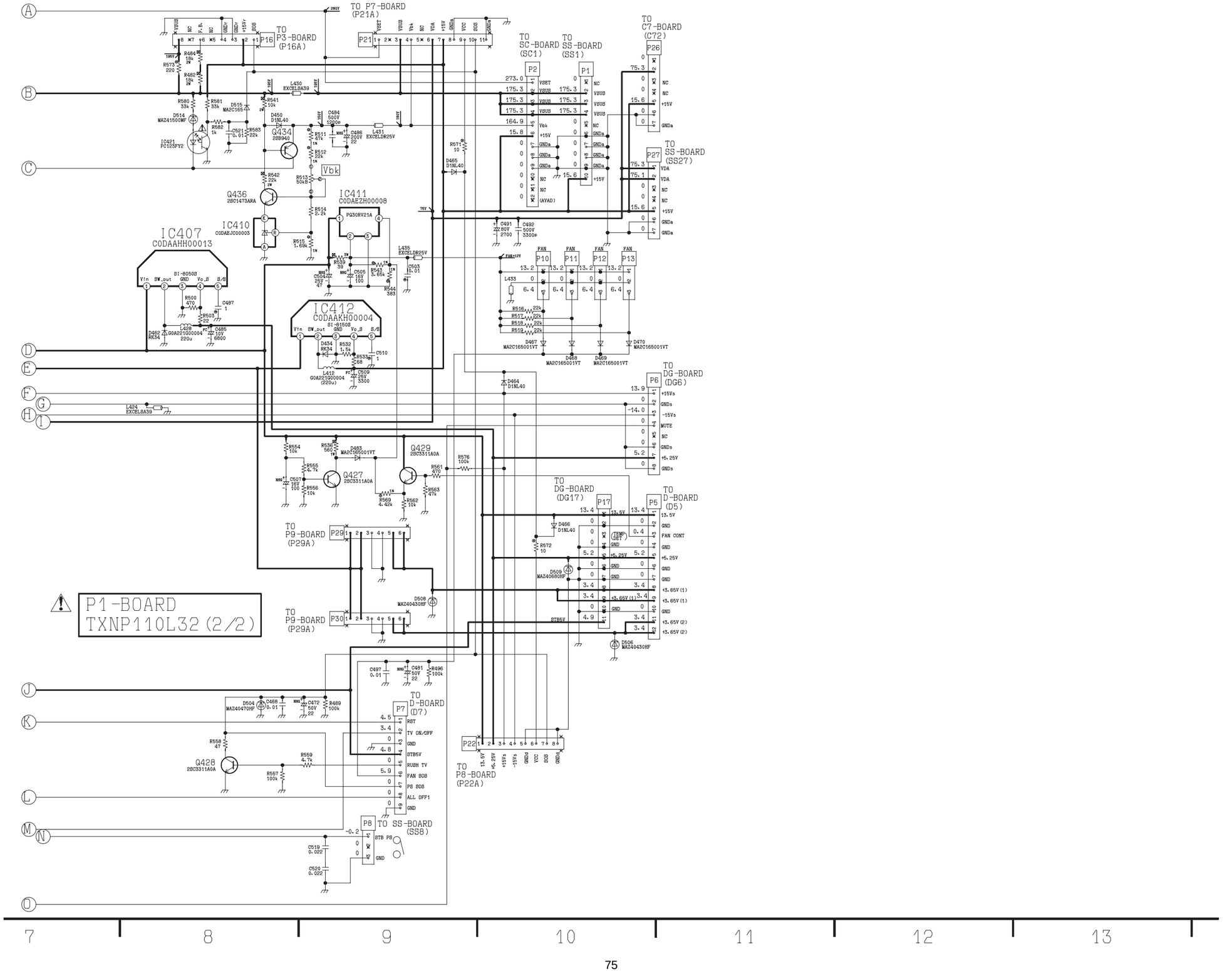
13.3. Power (F, P1, P3, P4, P5, P6, P7, P8 and P9 Board) Block Diagram



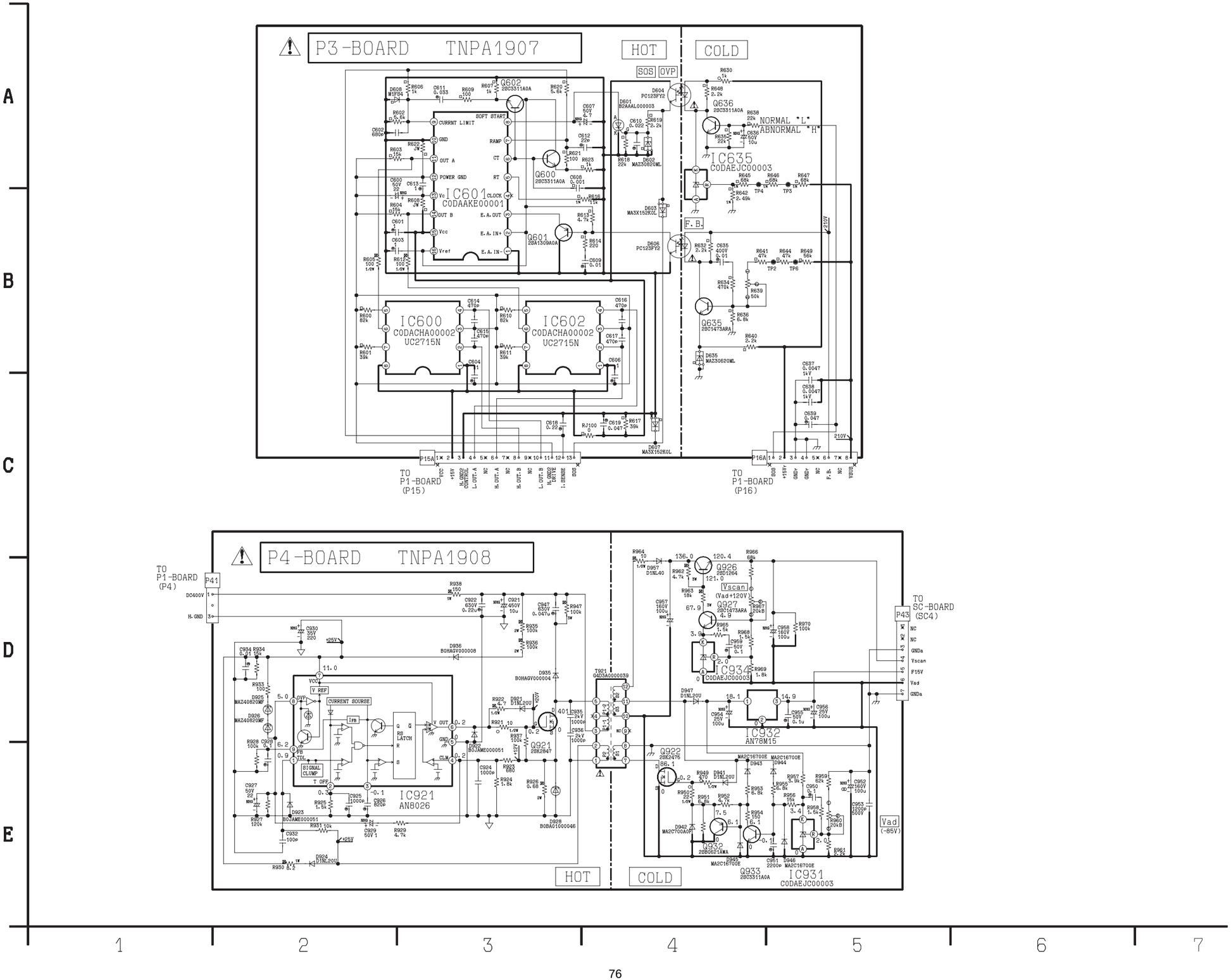
13.4. P1-Board (1/2) Schematic Diagram


P1-BOARD TXNP110L32(1/2)
IC401 AN7715F UPC2415AHF
IC400 MIP0210SY4TV
IC403 UPC2260V
IC406 C0DAEJC00003
TO P3-BOARD (P15)
TO F-BOARD (F2)
TO P4-BOARD (P41)
TO P5-BOARD (P18A)
TO P6-BOARD (P19A)
HOT
LIVE CIRCUIT
COLD
PFC ON "L"
PFC OFF "H"
NEUTRAL
LIVE
Q408 2SC13840W
Q409 2SA684
Q410 2SC13840W
Q411 2SC13840W
Q412 2SK2197
Q413 2SK2197
Q414 2SK2197
Q415 2SK2197
Q416 2SK2847
Q417 2SC3311A0A
Q418 2SC3311A0A
Q421 2SA1309A0A
Q426 2SK2197
Q430 2SB0621AWA
Q431 2SC3311A0A
Q432 2SA1309A0A
Q400 2SB1436
Q401 2SB1436
Q402 B1DEGM000015
Q403 B1DEGM000015
Q404 2SK3318
Q405 2SK3318
Q406 2SC13840W
Q407 2SA684
Q419 2SD2177
Q423 2SK3318
Q424 2SK3318
Q425 2SD2177
T400 G4D5A0000008
T401 G4D5A0000009
T402 ETD25AD18EAG
T404 ETH19K191AM
T405 ETH19K191AM
L400 EXCEL8A39
L401 G4D5A0000007
L402 G4D5A0000007
L411 G0ZZ0000198G
L426 EXCEL8A39
L434 G0ZZ0000198G
L435 100
LF400 ELF11M010E
RL400 K6B1AGA00086
RL401 K6B2AGA00020
D400 B0HAMC000005
D401 B0HAMC000005
D403 MAZ43000HF
D404 DNL20U
D405 MAZ43000HF
D406 MAZ43000HF
D407 FML226S B0FAAR000002
D408 MAZ43000HF
D409 DNL20U
D410 DNL20U
D411 MAZ1650011VT
D412 DNL20U
D413 DNL20U
D414 DNL20U
D415 RK34
D416 DNL20U
D417 DNL20U
D418 DNL20U
D419 DNL20U
D420 ERZV10V621P2
D421 B0EBKT000003
D423 BOJAME000058
D424 BOJAME000058
D425 B0EAEV000001
D426 MA2C165001VT
D427 RCS82
D428 DNL20U
D429 MAZ21200A
D430 PC123FY2
D431 PC123FY2
D432 FML226S B0FAAR000002
D437 FML226S
D438 FML226S
D441 B0HAPM000032
D442 B0HAPM000032
D443 FML2G12S
D444 FML2G12S
D445 MAZ43000HF
D446 MAZ40510MF
D451 FML2G16S
D452 FML2G16S
D453 FML2G16S
D454 FML2G16S
D455 MA2C165001VT
D459 MA2C700A0F
D460 MA2C165001VT
D471 MA2C16700E
D474 MA2C16700E
D478 MA2C16700E
D479 MAZ40560MF
D500 B0EARM000018
D505 MAZ40820LF
D507 B0BA01000046
D510 B0BA01000046
D511 B0BA01000046
D512 DNL20U
D513 MA2C700A0F
D520 B0HAG7000008
D527 B0EBKT000003
D528 B0EBKT000003
J8401 JUMPER
P1 P2 P3 P4 P5 P6 P7 P8 P9 P15 P18 P19
C400 AC250V 2200p
C401 AC250V 2200p
C402 250V
C403 0.047
C404 AC250V 2200p
C405 680p
C406 400V 1
C407 100n 1kV
C408 100n 1kV
C409 100n 1kV
C410 10000p
C411 450V 330
C412 450V 330
C413 AC250V 0.068
C414 450V 22
C415 25V 470
C416 450V 22
C417 450V 330
C418 450V 330
C419 2kV 3900p
C421 1000V 0.1
C422 50V 220
C423 50V 22
C424 0.1
C425 25V 47
C426 500V 820p
C427 1kV 100p
C428 0.1
C429 50V 220
C430 0.047
C431 680p
C432 50V 0.047
C433 2kV 1000p
C434 2kV 1000p
C435 1kV 1000p
C436 500V 560p
C437 500V 560p
C438 500V 560p
C439 25V 47
C440 1kV 470
C441 1kV 100p
C442 1kV 100p
C443 50V 0.01
C444 1kV 100p
C445 1kV 100p
C446 50V 0.01
C447 50V 0.01
C448 50V 0.01
C449 2kV 3300 25V
C451 2700p
C452 80V 2700
C453 25V 2200
C454 25V 2200
C455 50V 0.01
C458 500V 0.01
C459 50V 22
C460 50V 47
C461 50V 47
C462 16V 4700
C463 25V 47
C464 1kV 1000p
C465 1kV 1000p
C466 1kV 1000p
C467 50V 22
C468 50V 4.7
C469 50V 4.7
C470 50V 47
C471 50V 47
C472 1kV 100p
C473 50V 0.01
C474 50V 0.01
C475 500V 1200p
C476 250V 1000
C477 250V 1000
C478 250V 1000
C479 250V 1000
C480 250V 1000
C483 50V 0.01
C484 50V 0.01
C485 50V 0.01
C486 470p
C487 50V 0.01
C488 0.056
C489 200V 22
C494 0.056
C496 470p
C498 2700p
C499 470p 50V
C500 25V 47
C501 50V 0.01
C502 1
C503 50V 0.01
C511 630V
C512 630V
C513 16V 10
C515 50V 33
C516 0.047
C517 50V 33
C518 0.047
R400 6.8
R401 6.8
R402 6.8
R403 6.8
R404 6.8
R405 6.8
R406 820k
R407 820k
R408 820k
R409 150k
R410 33k
R411 10k
R412 10k
R413 22
R414 10
R415 10
R416 82
R417 220
R418 10k
R419 10k
R420 10k
R421 10
R422 10
R423 10k
R424 10k
R425 0.15
R426 0.15
R427 470
R428 470
R429 182k
R430 182k
R431 182k
R432 33k
R433 4.7k
R434 100
R435 100
R436 22
R437 22
R438 182k
R439 182k
R440 0.47
R441 2.2k
R442 2.2k
R443 10
R444 10
R445 10k
R446 4.7k
R447 10k
R448 10k
R449 47k
R450 47k
R451 10k
R452 82k
R453 100
R454 82k
R456 10k
R457 10k
R458 100
R459 0.22
R460 6.8
R461 0.22
R462 0.15
R463 0.15
R464 1k
R465 6.8
R466 1k
R467 220
R468 10k
R469 50V 4.7
R470 220
R471 390
R472 10
R473 50V 47
R474 100k
R475 100
R476 10
R478 22k
R479 50V 47
R480 50V 47
R481 4.7k
R482 D1NL40
R484 50V 47
R485 50V 47
R487 100
R488 47
R489 D1NL40
R490 50V 47
R491 50V 47
R492 22k
R493 4.7k
R495 470
R496 50V 47
R497 50V 47
R498 50V 47
R499 50V 47
R500 50V 47
R501 1.5
R502 4.7k
R503 1.5
R504 1.5k
R505 6.8k
R506 22
R507 50V 47
R508 68k
R509 50V 47
R510 2.55k
R511 50V 47
R512 50V 47
R513 50V 47
R514 50V 47
R515 50V 47
R516 50V 47
R517 50V 47
R518 50V 47
R519 50V 47
R520 50V 47
R521 50V 47
R522 50V 47
R523 50V 47
R524 50V 47
R525 50V 47
R526 10kB
R527 50V 47
R528 50V 47
R529 22k
R530 50V 47
R531 6.8k
R532 50V 47
R533 50V 47
R534 16k
R535 3.3k
R536 50V 47
R537 100k
R538 150
R539 50V 47
R540 6.8k
R541 50V 47
R542 50V 47
R543 50V 47
R544 50V 47
R545 50V 47
R546 10kB
R547 50V 47
R548 10kB
R549 10
R550 50V 47
R551 50V 47
R552 22
R553 50V 47
R554 50V 47
R555 50V 47
R556 50V 47
R557 50V 47
R558 50V 47
R559 50V 47
R560 560
R561 50V 47
R562 50V 47
R563 50V 47
R564 82k
R565 82k
R566 82k
R567 470
R568 470
R569 50V 47
R570 50V 47
R571 50V 47
R572 50V 47
R573 50V 47
R574 50V 47
R575 50V 47
R576 50V 47
R577 50V 47
R578 50V 47
R579 50V 47
R580 50V 47
R581 50V 47

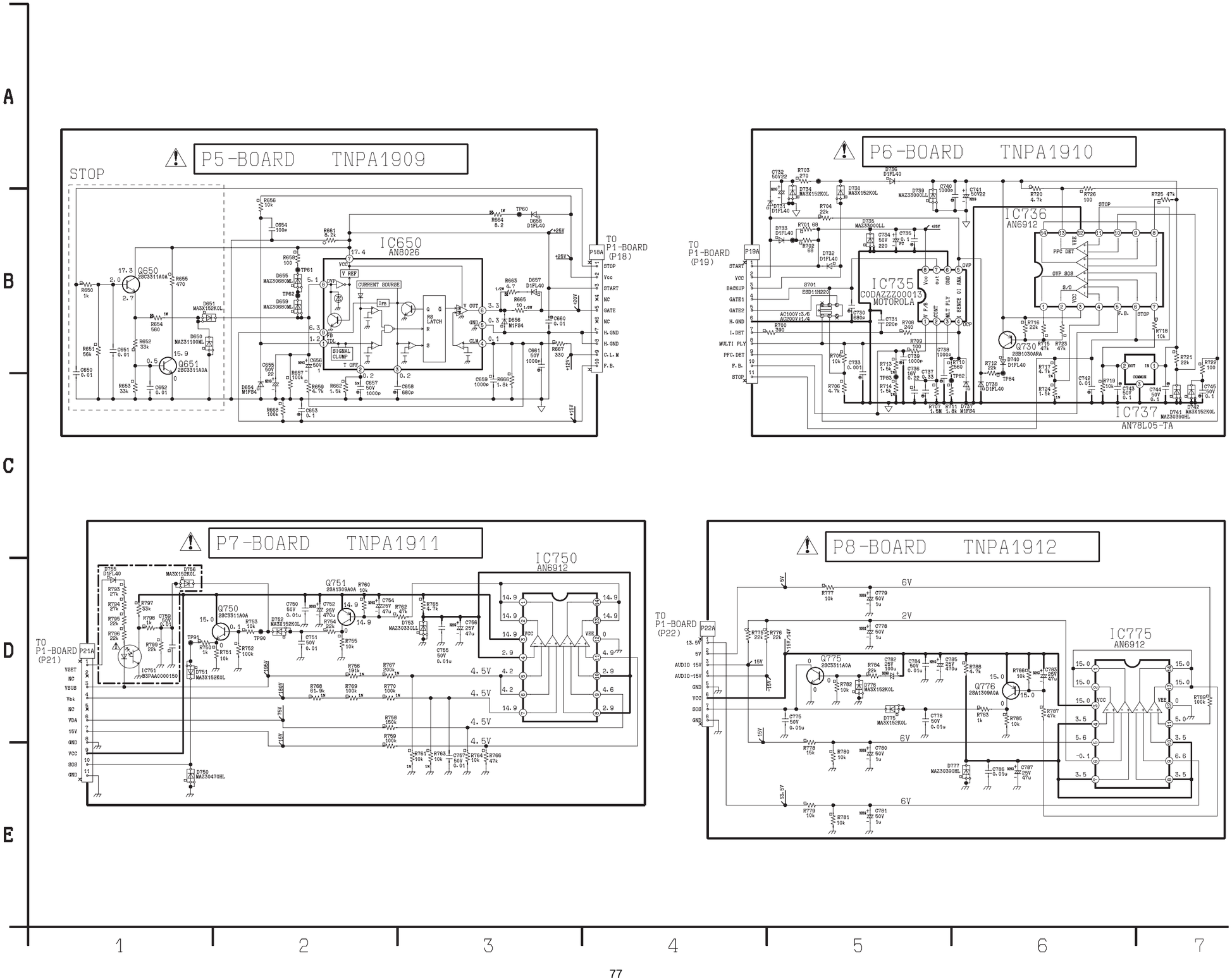
13.5. P1-Board (2/2) Schematic Diagram



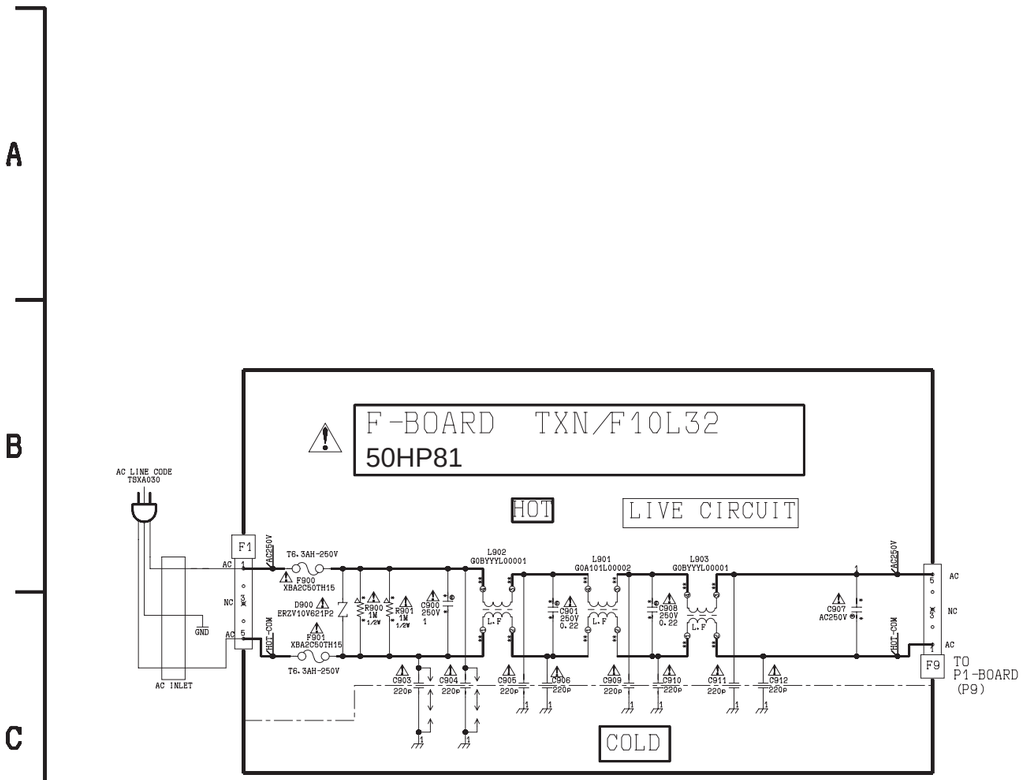
13.6. P3 and P4-Board Schematic Diagram

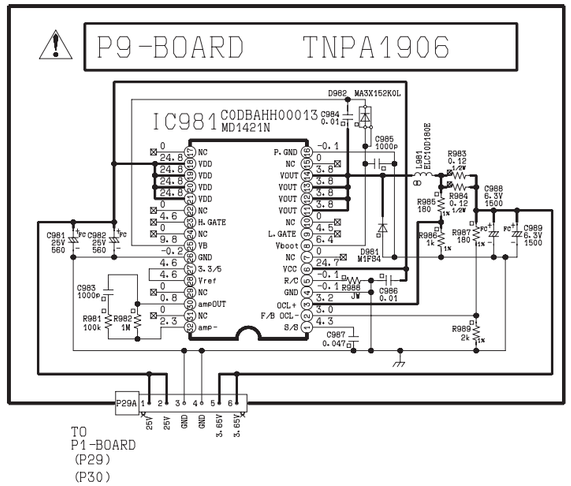


13.7. P5, P6, P7 and P8-Board Schematic Diagram

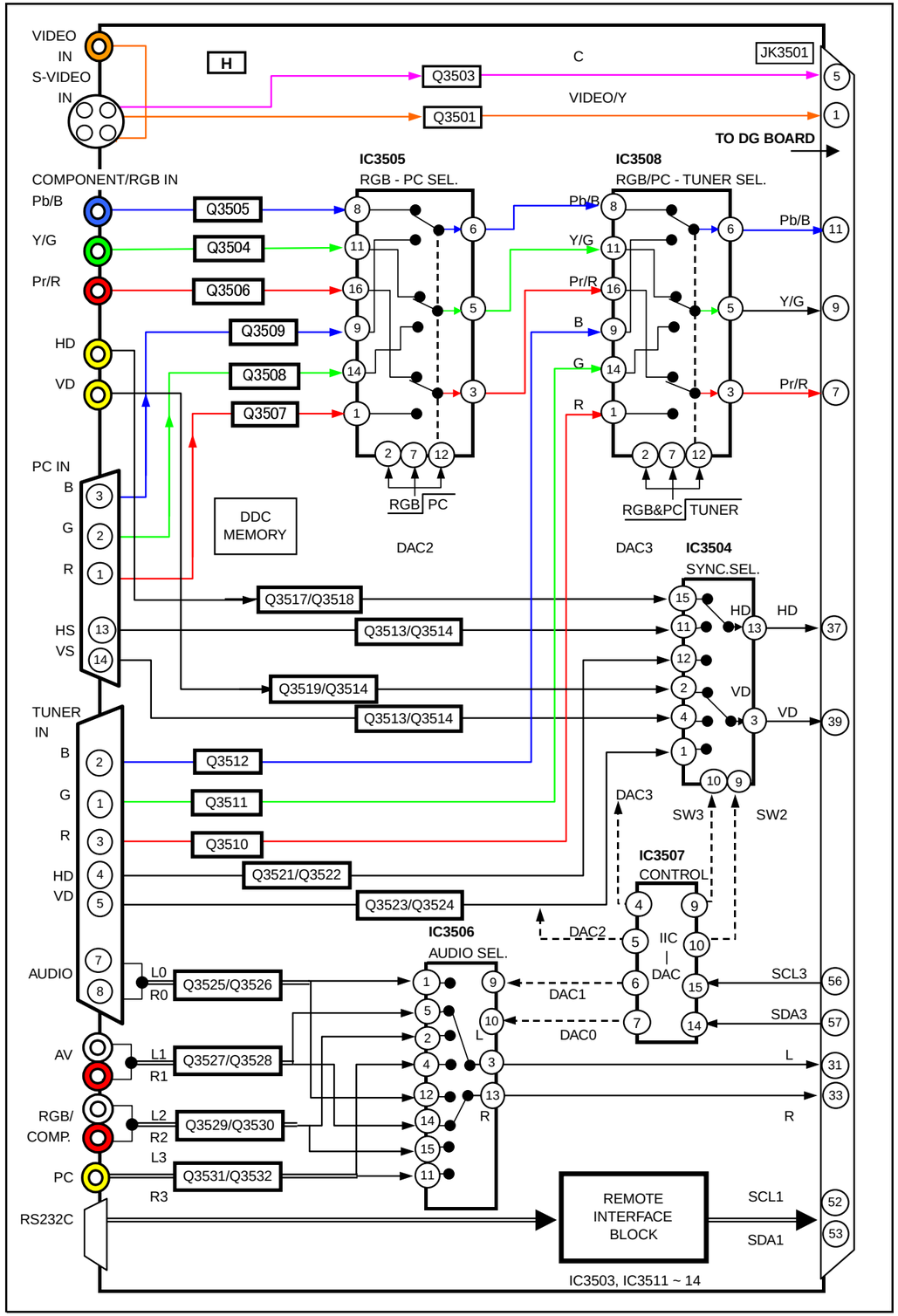


13.8. P9 and F-Board Schematic Diagram

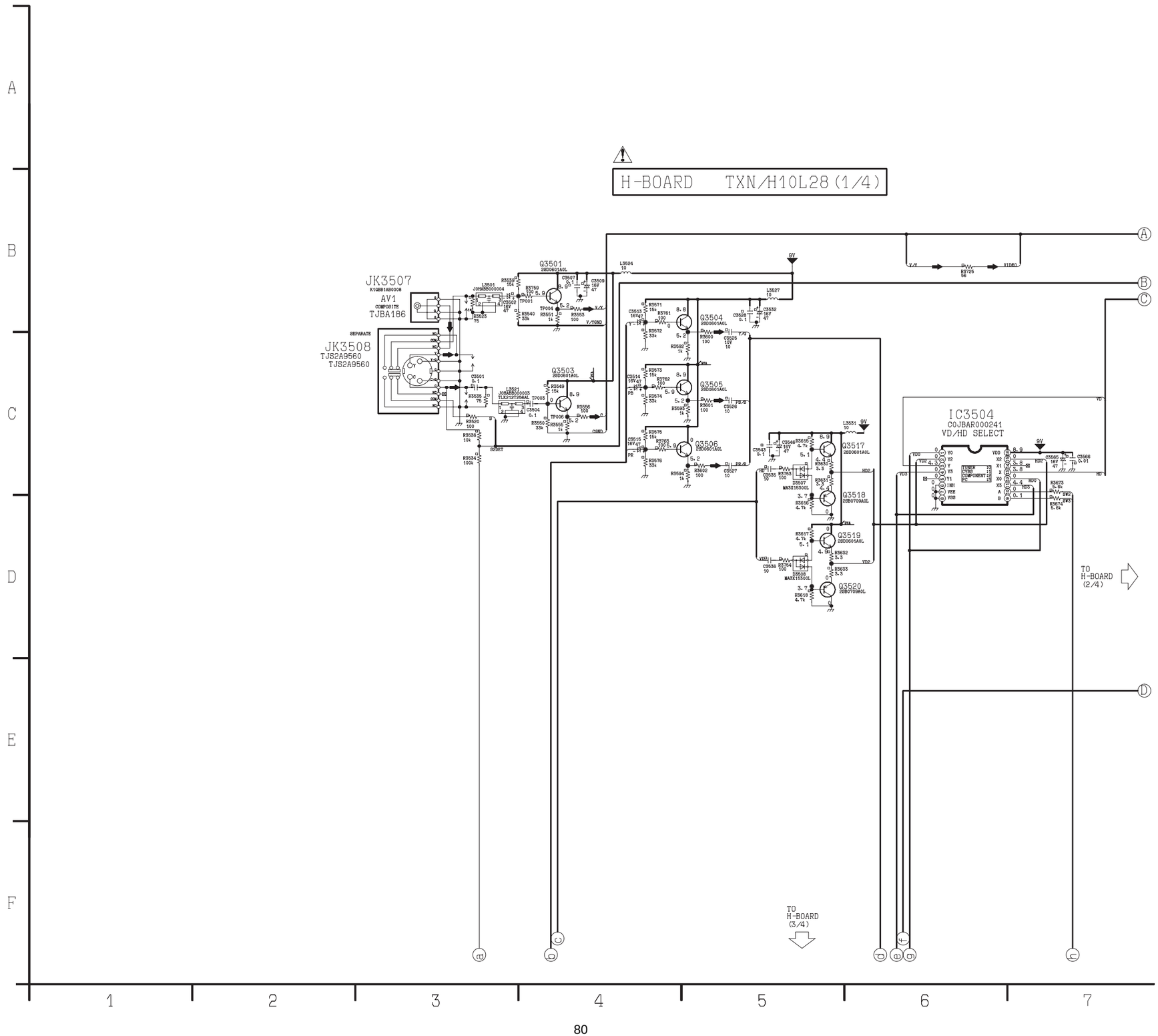




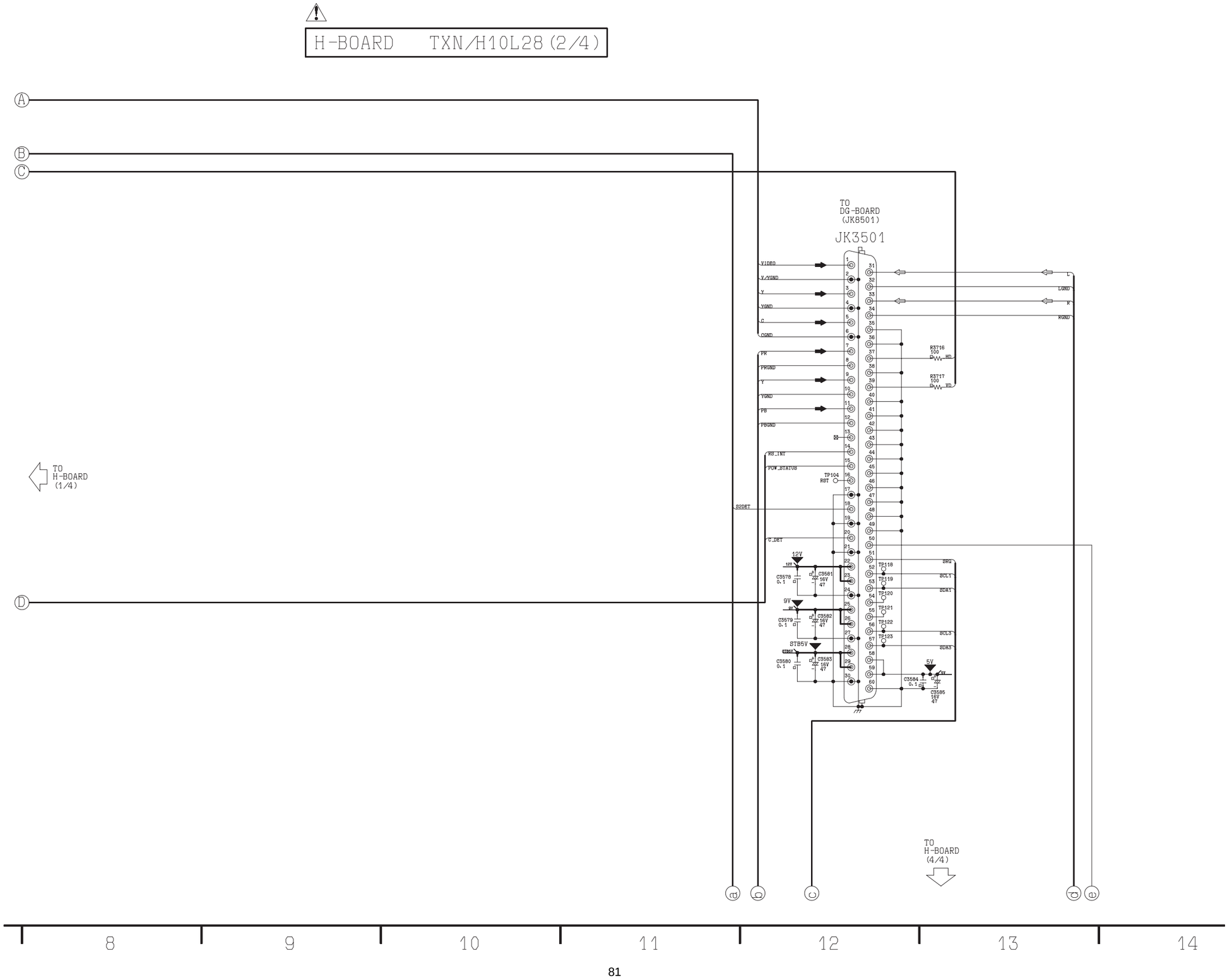
13.9. H-Board Block Diagram



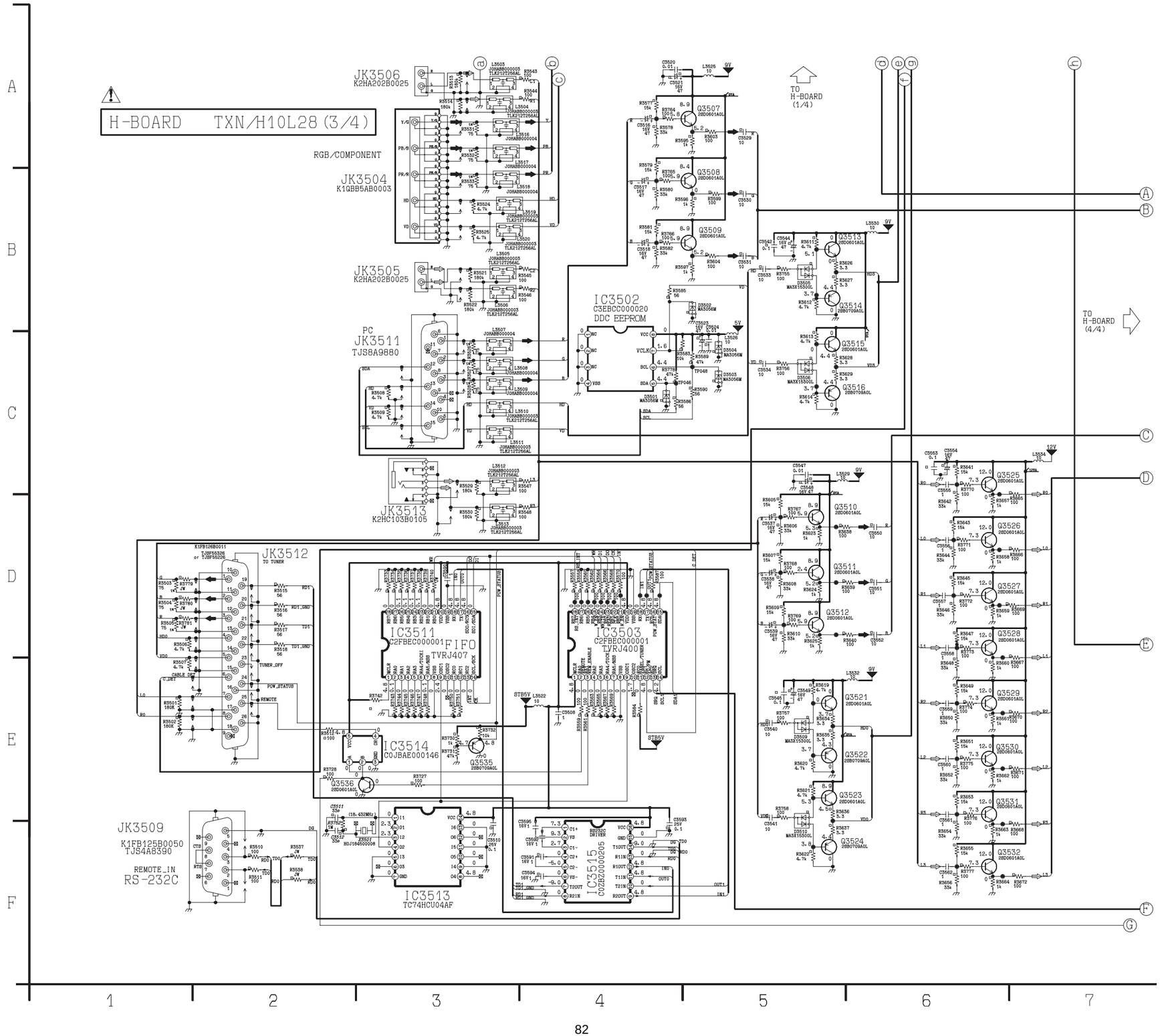
13.10. H-Board (1/4) Schematic Diagram



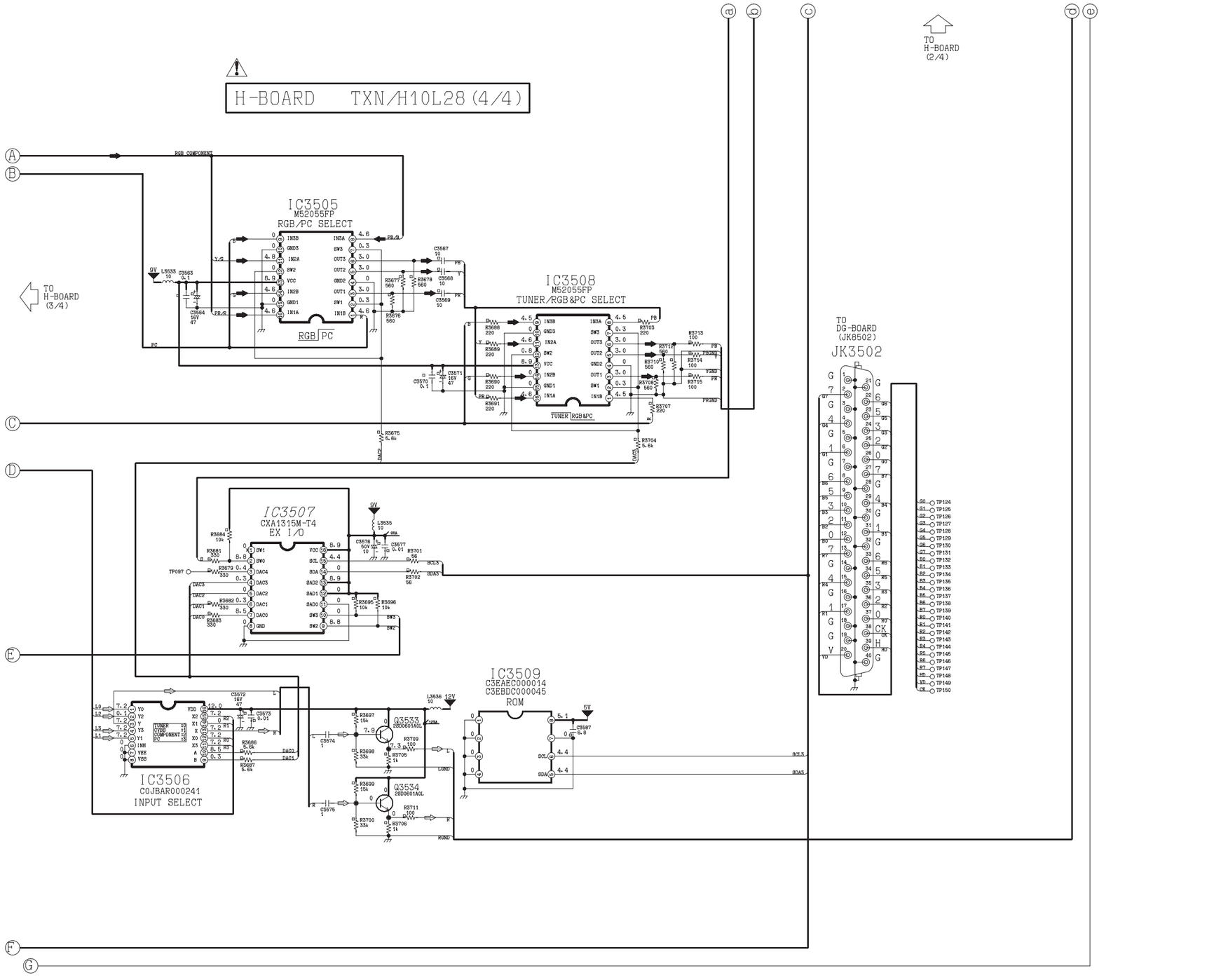
13.11. H-Board (2/4) Schematic Diagram



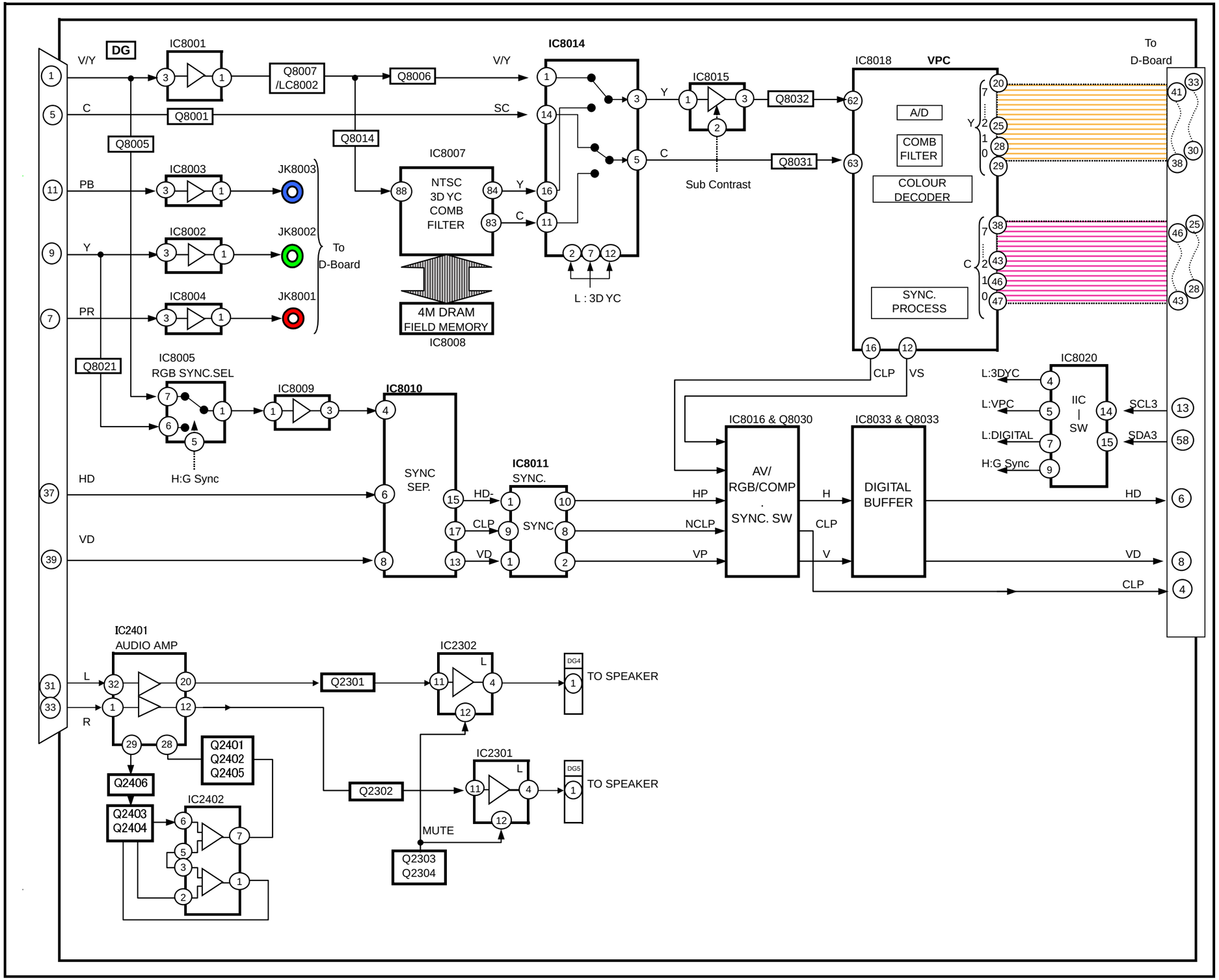
13.12. H-Board (3/4) Schematic Diagram



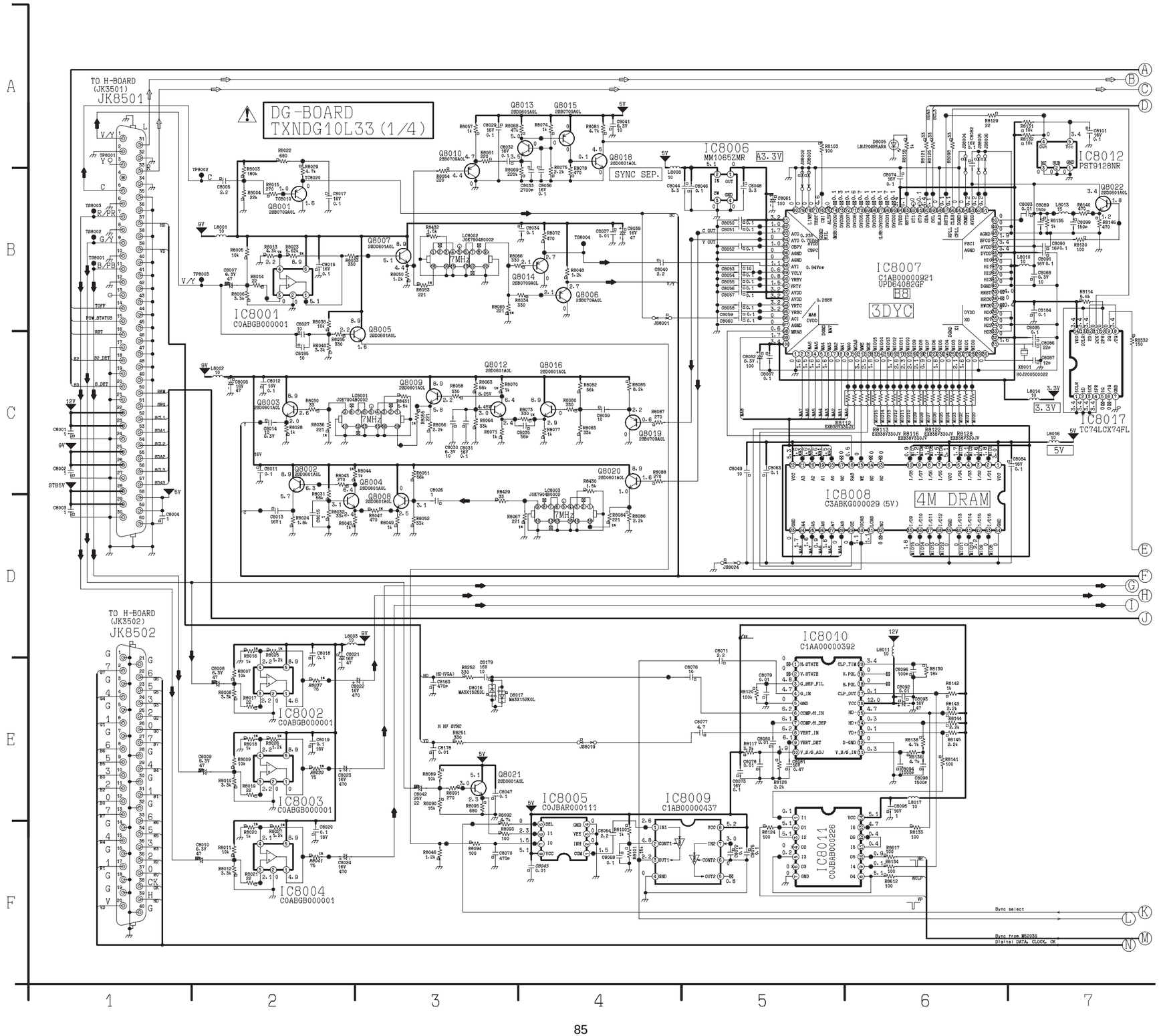
13.13. H-Board (4/4) Schematic Diagram



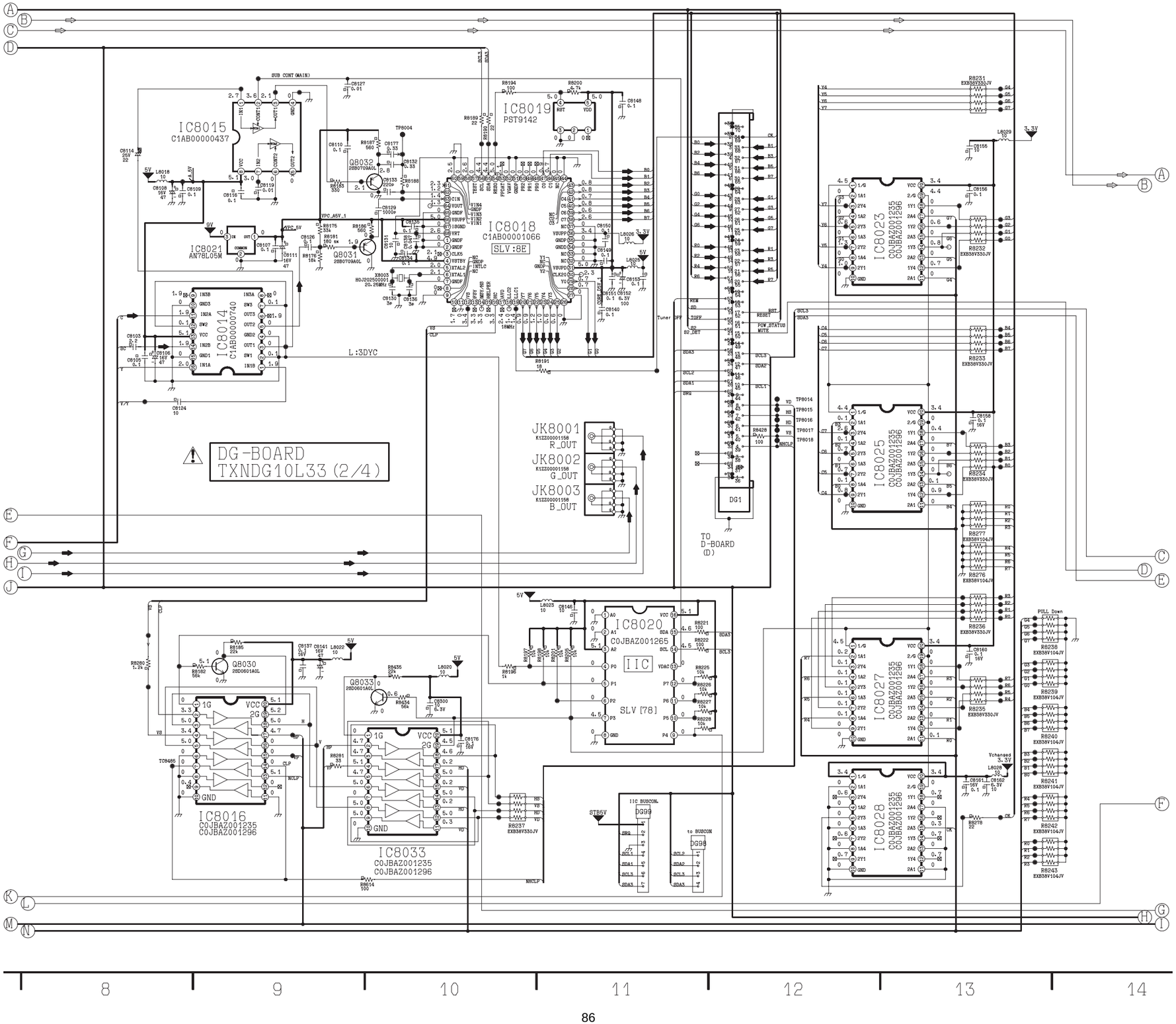
13.14. DG Board Block Diagram



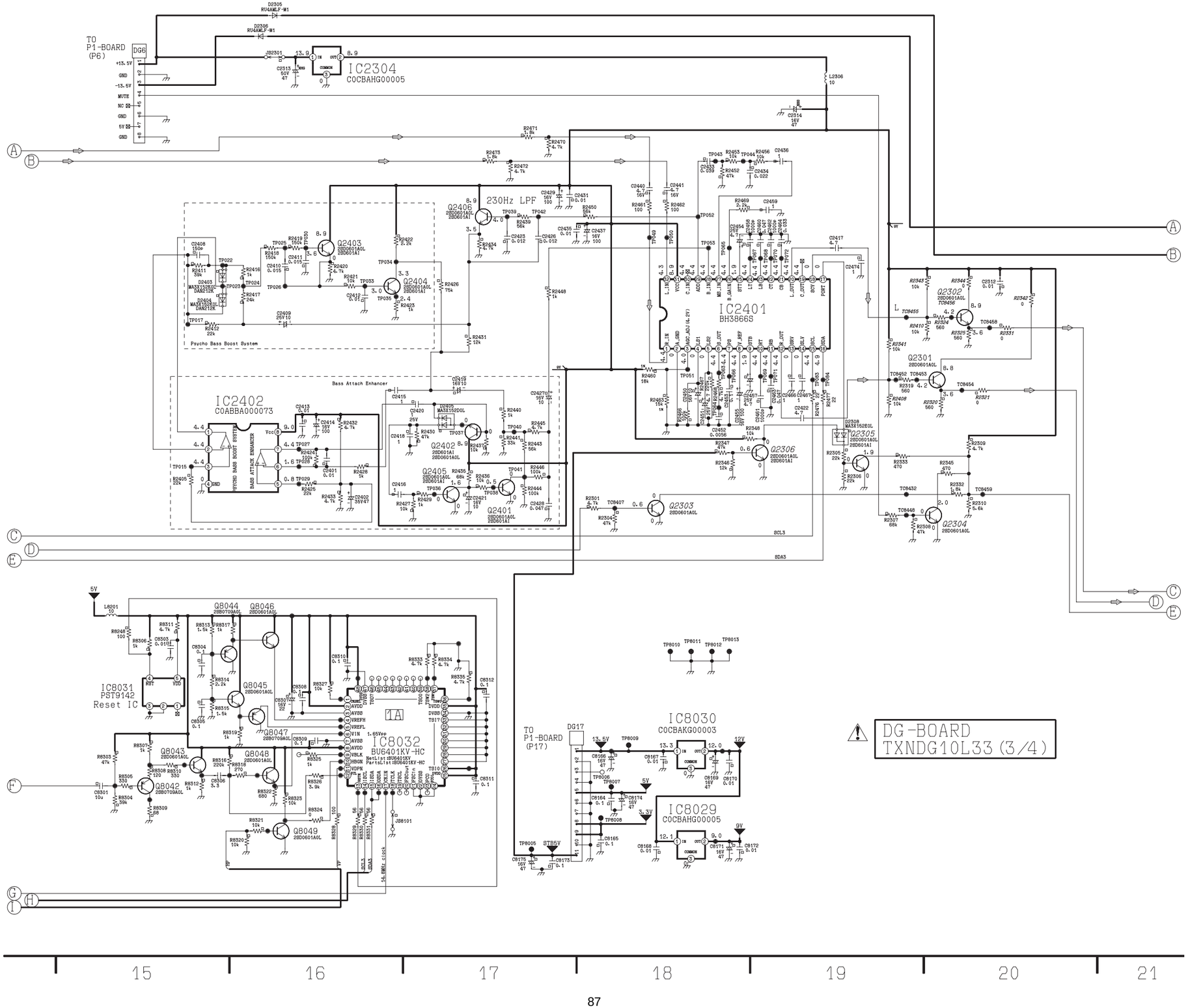
13.15. DG-Board (1/4) Schematic Diagram



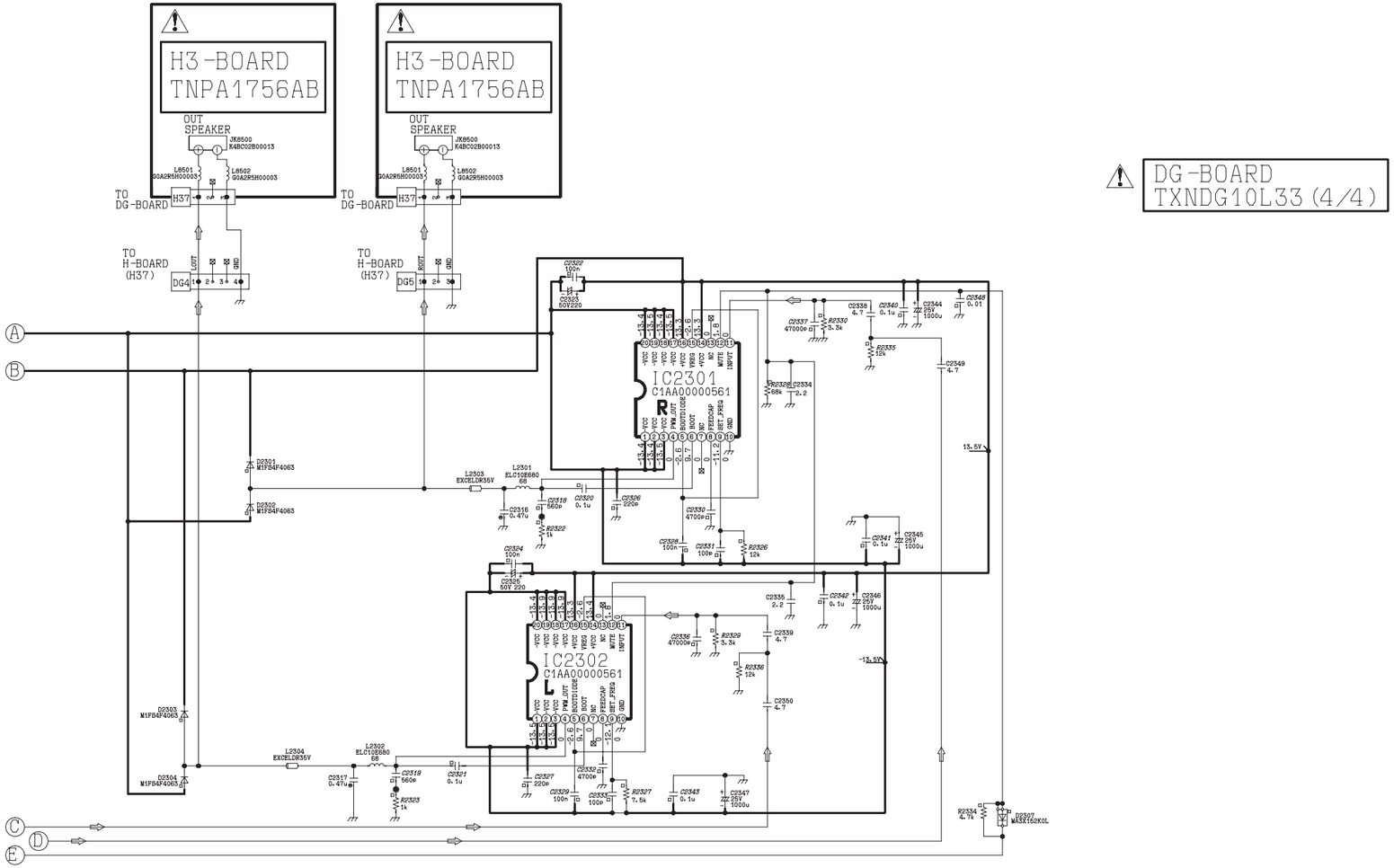
13.16. DG-Board (2/4) Schematic Diagram



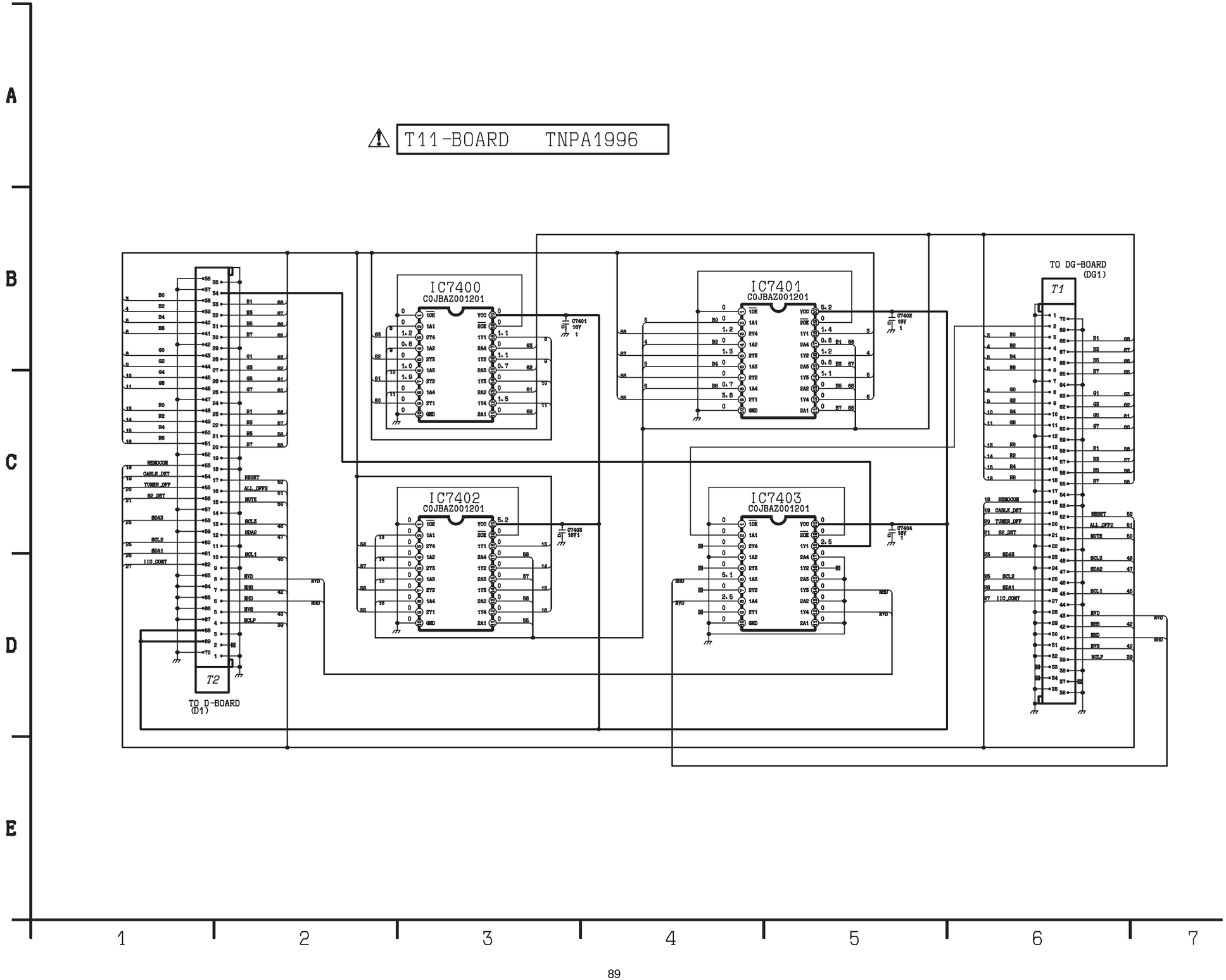
13.17. DG-Board (3/4) Schematic Diagram



13.18. DG-Board (4/4) Schematic Diagram



13.19. T11 Board Schematic Diagram

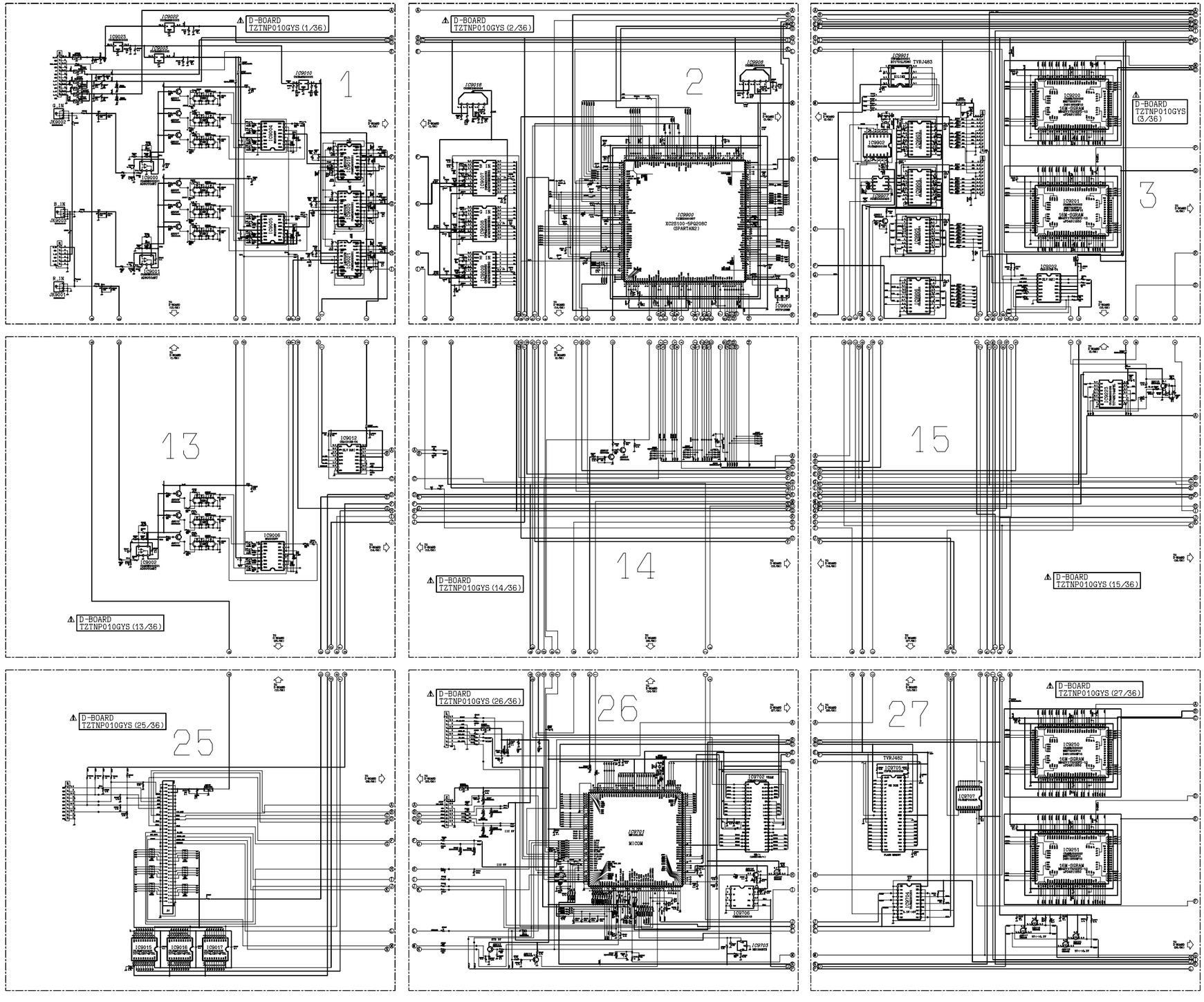


13.20. D-Board IC Location

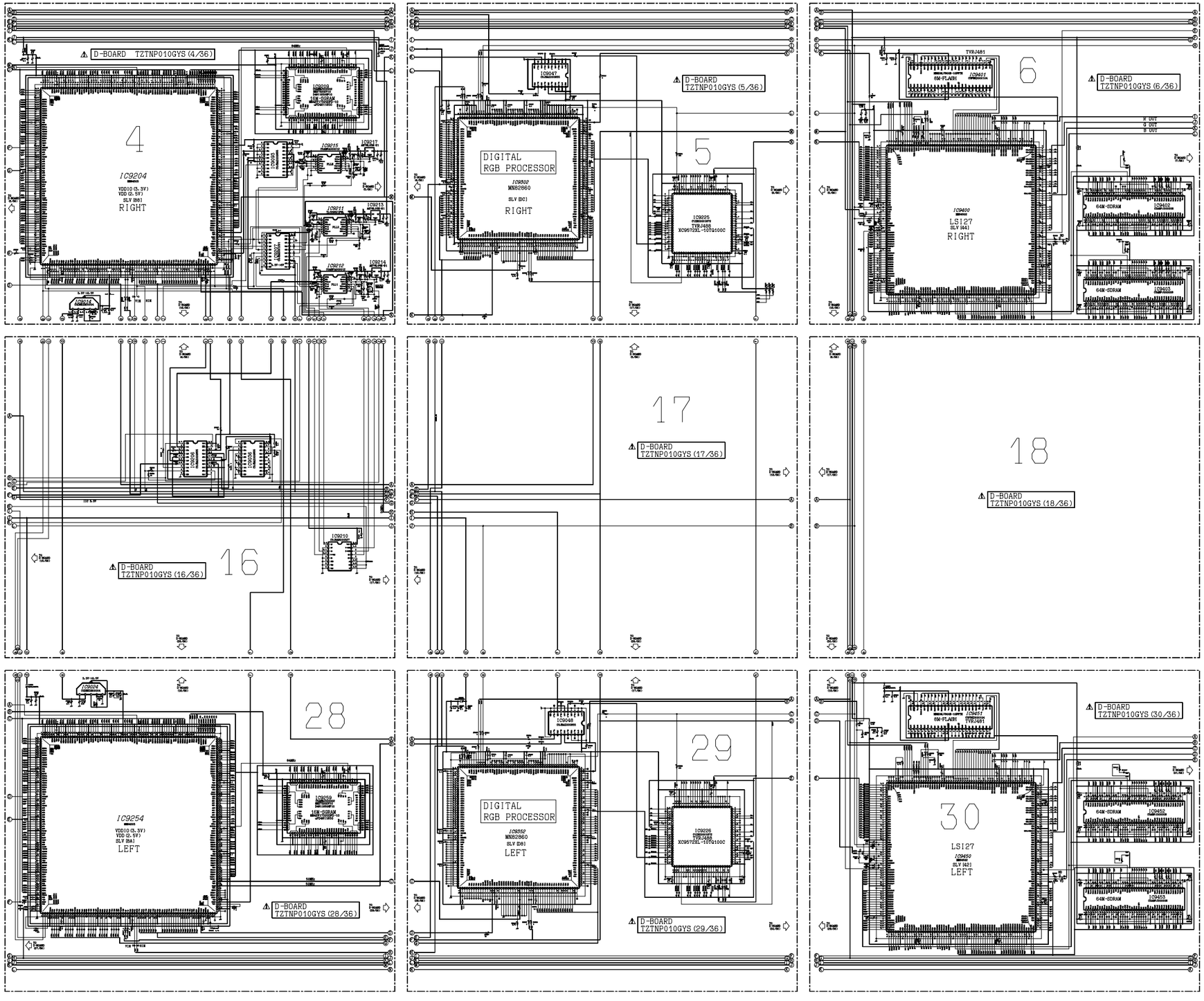
IC No.	*/36	Page
IC9000	1	95
IC9001	1	95
IC9002	13	107
IC9003	1	95
IC9004	1	95
IC9005	1	95
IC9006	13	107
IC9007	2	96
IC9008	2	96
IC9009	2	96
IC9010	1	95
IC9012	13	107
IC9014	4	98
IC9015	25	119
IC9016	25	119
IC9017	25	119
IC9018	2	96
IC9019	1	95
IC9020	1	95
IC9021	1	95
IC9022	1	95
IC9023	1	95
IC9024	28	122
IC9036	16	110
IC9047	5	99
IC9048	29	123
IC9061	7	101
IC9093	4	98
IC9200	3	97
IC9201	3	97
IC9202	3	97
IC9204	4	98
IC9206	16	110
IC9207	4	98
IC9209	4	98
IC9210	16	110
IC9211	4	98
IC9211	4	98
IC9212	4	98
IC9213	4	98
IC9214	4	98
IC9215	4	98
IC9217	4	98
IC9223	15	109
IC9225	5	99
IC9226	29	123
IC9250	27	121
IC9251	27	121
IC9254	28	122
IC9259	28	122
IC9302	5	99
IC9352	29	123
IC9400	6	100
IC9401	6	100
IC9401	6	100
IC9402	6	100
IC9403	6	100
IC9450	30	124
IC9451	30	124
IC9452	30	124
IC9453	30	124
IC9501	22	116

IC No.	*/36	Page
IC9502	23	117
IC9503	10	104
IC9504	11	105
IC9505	35	129
IC9506	34	128
IC9507	23	117
IC9508	23	117
IC9509	23	117
IC9510	23	117
IC9511	23	117
IC9512	24	118
IC9513	24	118
IC9516	21	115
IC9520	10	104
IC9521	34	128
IC9551	19	113
IC9552	8	102
IC9554	8	102
IC9555	32	126
IC9557	20	114
IC9558	8	102
IC9559	20	114
IC9560	8	102
IC9561	20	114
IC9562	21	115
IC9563	21	115
IC9564	21	115
IC9565	21	115
IC9701	26	120
IC9702	26	120
IC9703	26	120
IC9704	27	121
IC9705	27	121
IC9706	26	120
IC9707	27	121
IC9900	2	96
IC9901	3	97
IC9902	3	97
IC9903	3	97
IC9904	3	97
IC9905	3	97
IC9906	3	97
IC9907	3	97
IC9908	2	96
IC9909	2	96

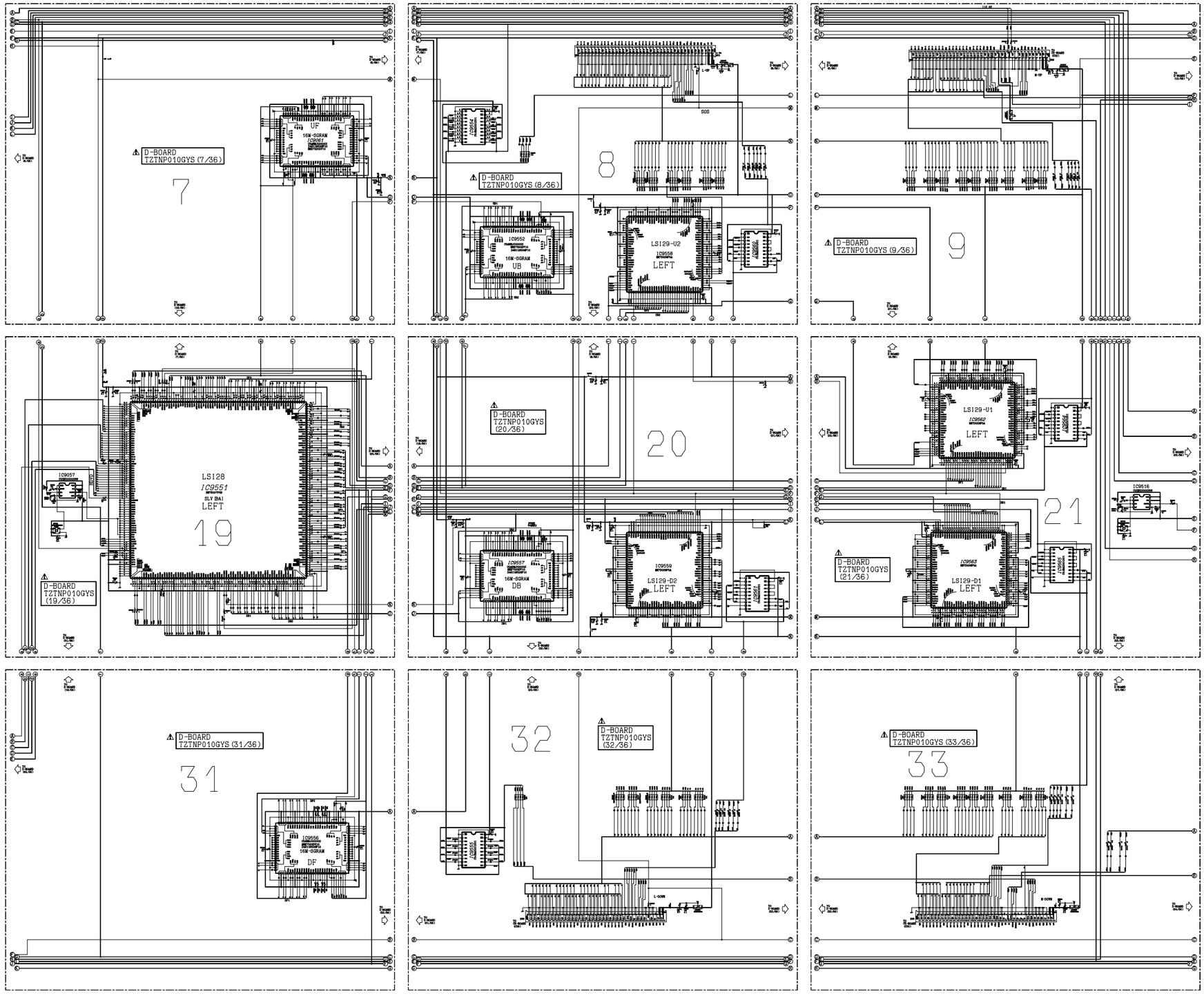
13.21. D-Board Information (1/4)



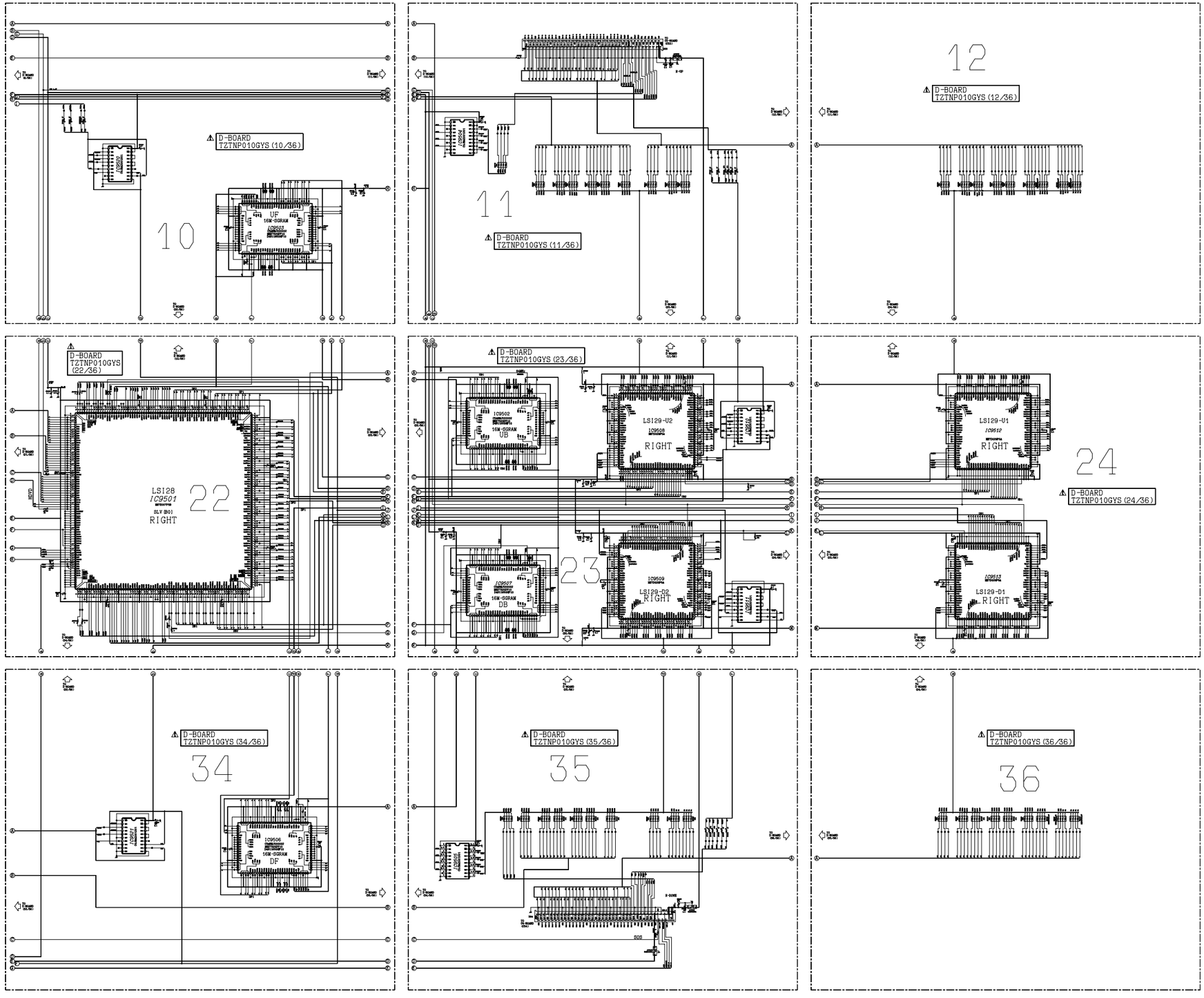
13.22. D-Board Information (2/4)



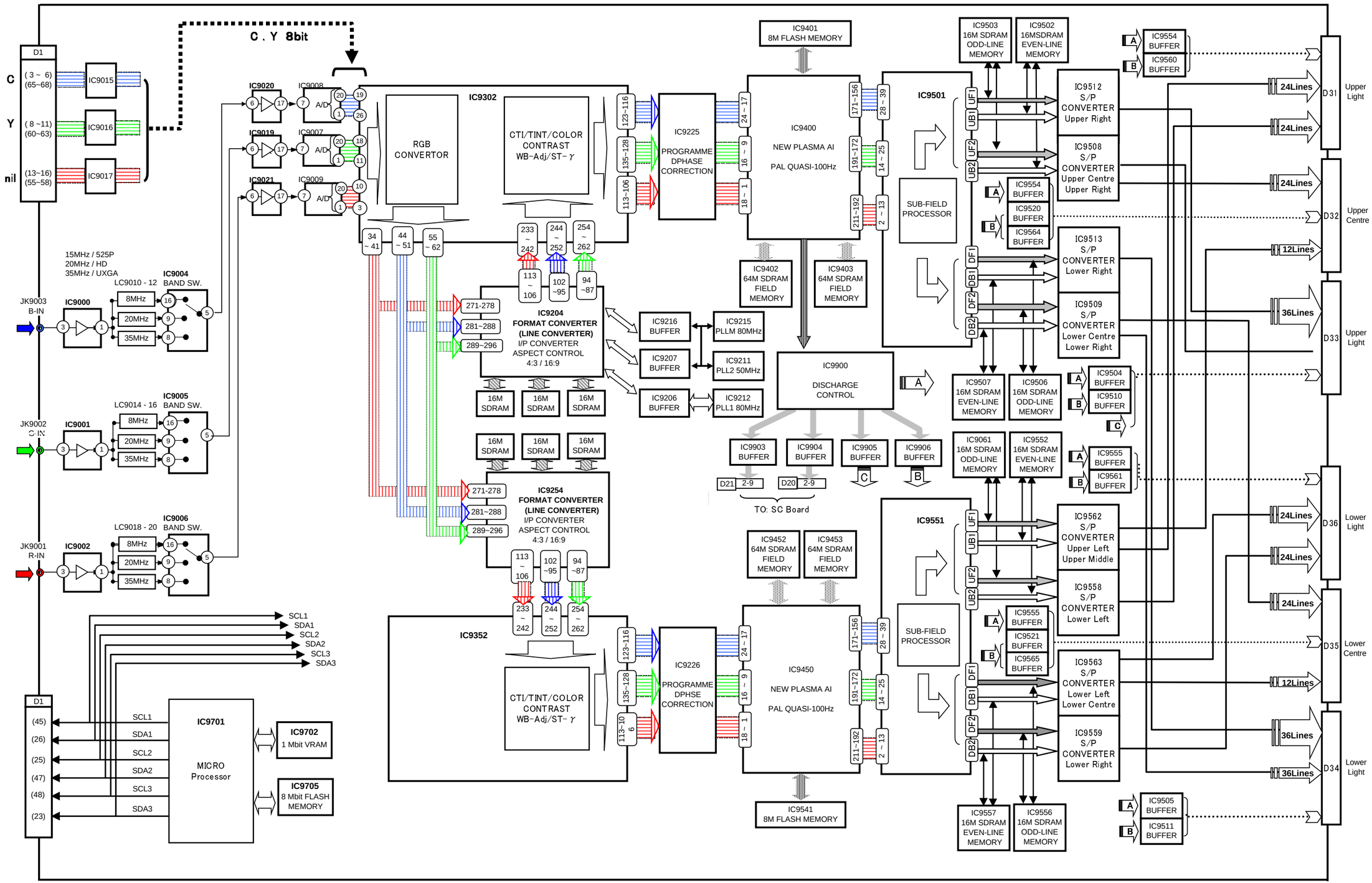
13.23. D-Board Information (3/4)



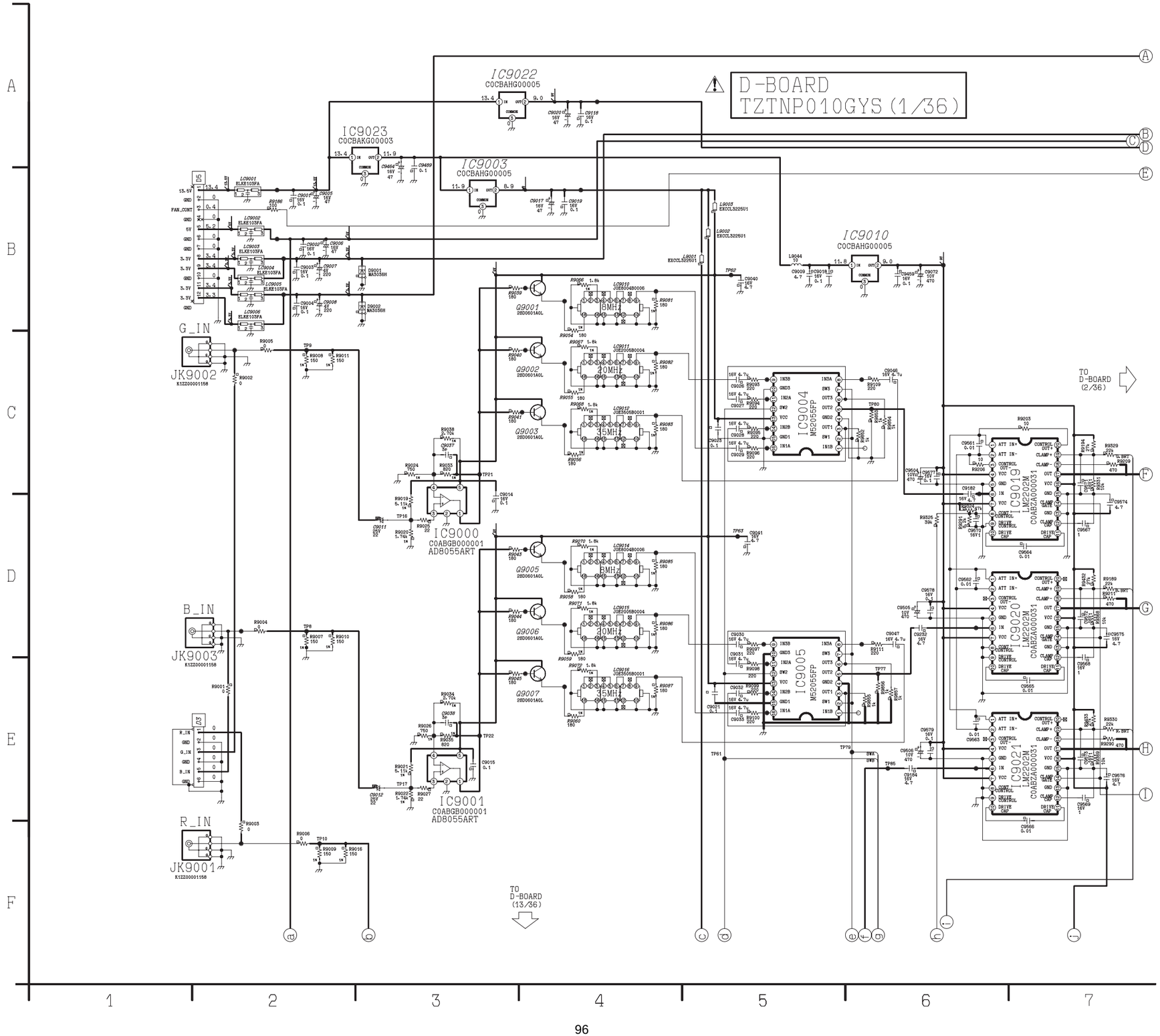
13.24. D-Board Information (4/4)



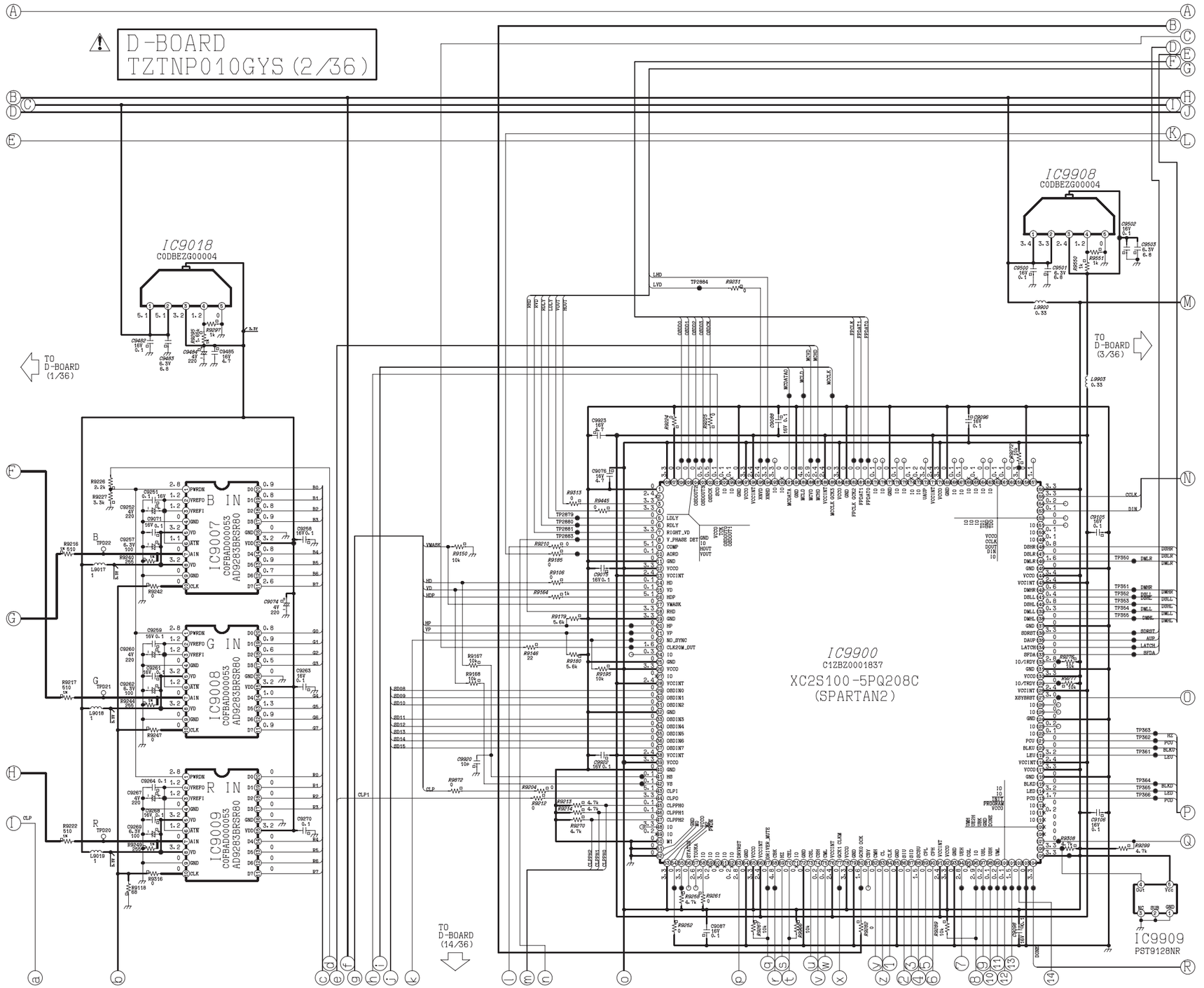
13.25. D-Board Block Diagram



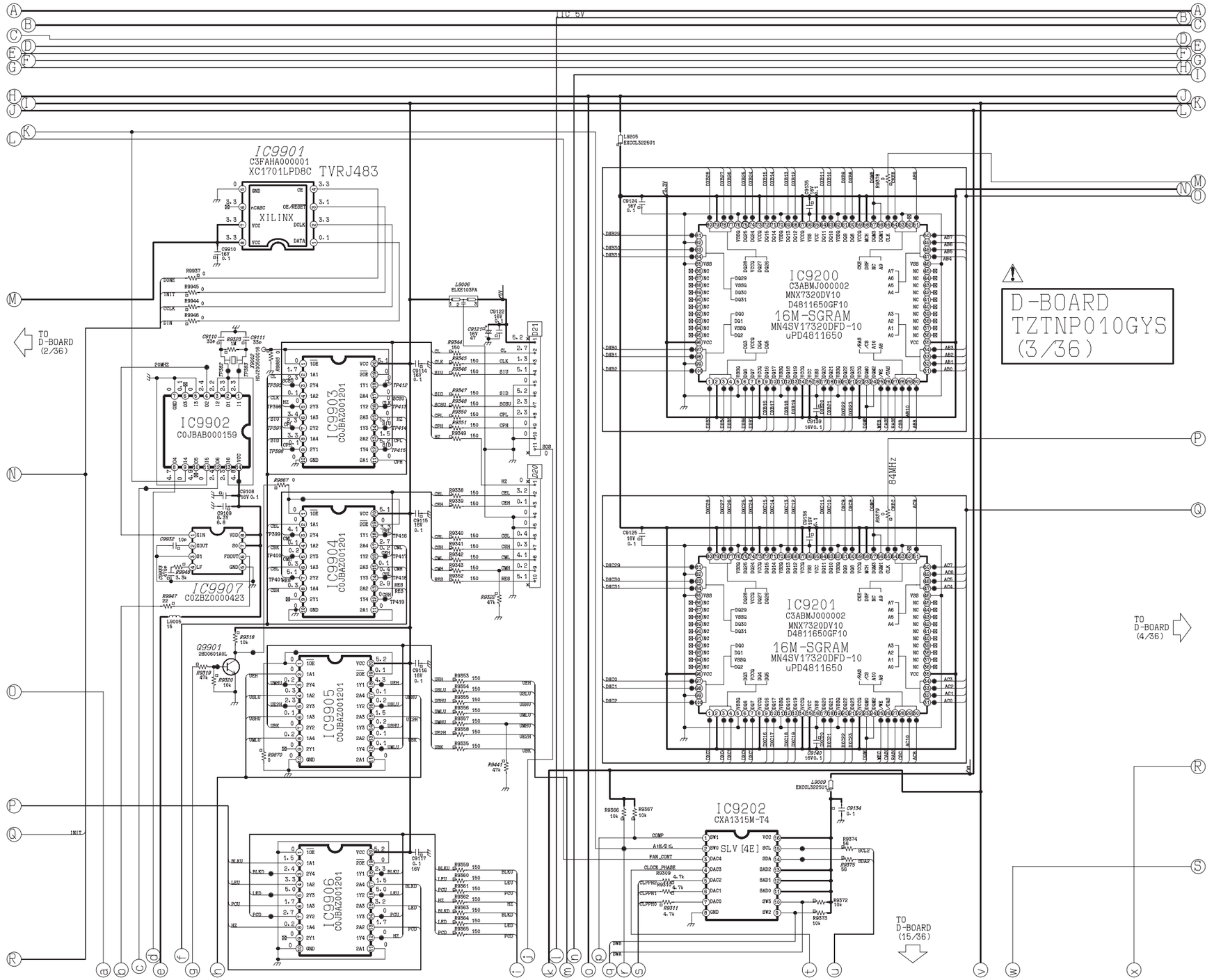
13.26. D-Board (1/36) Schematic Diagram



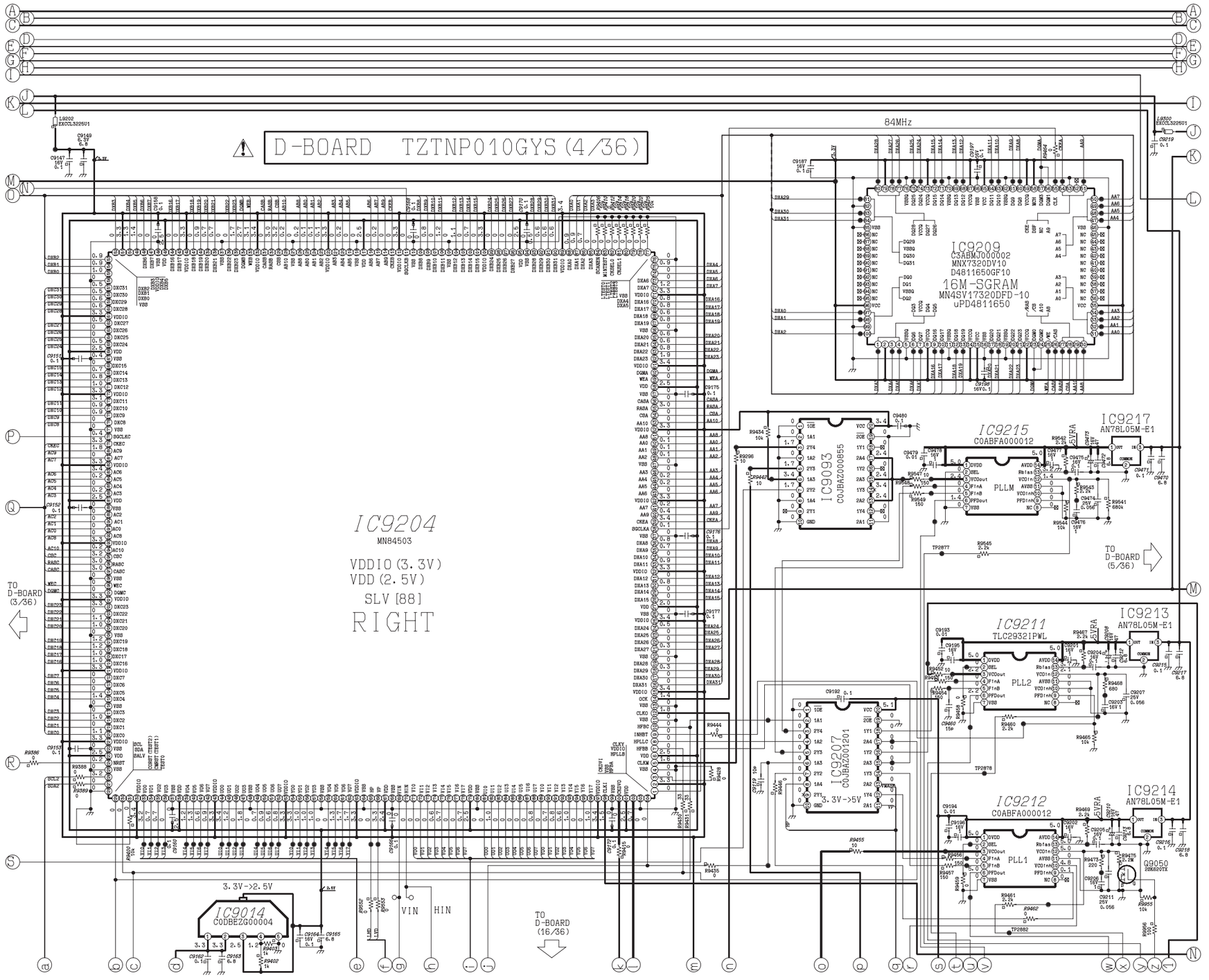
13.27. D-Board (2/36) Schematic Diagram



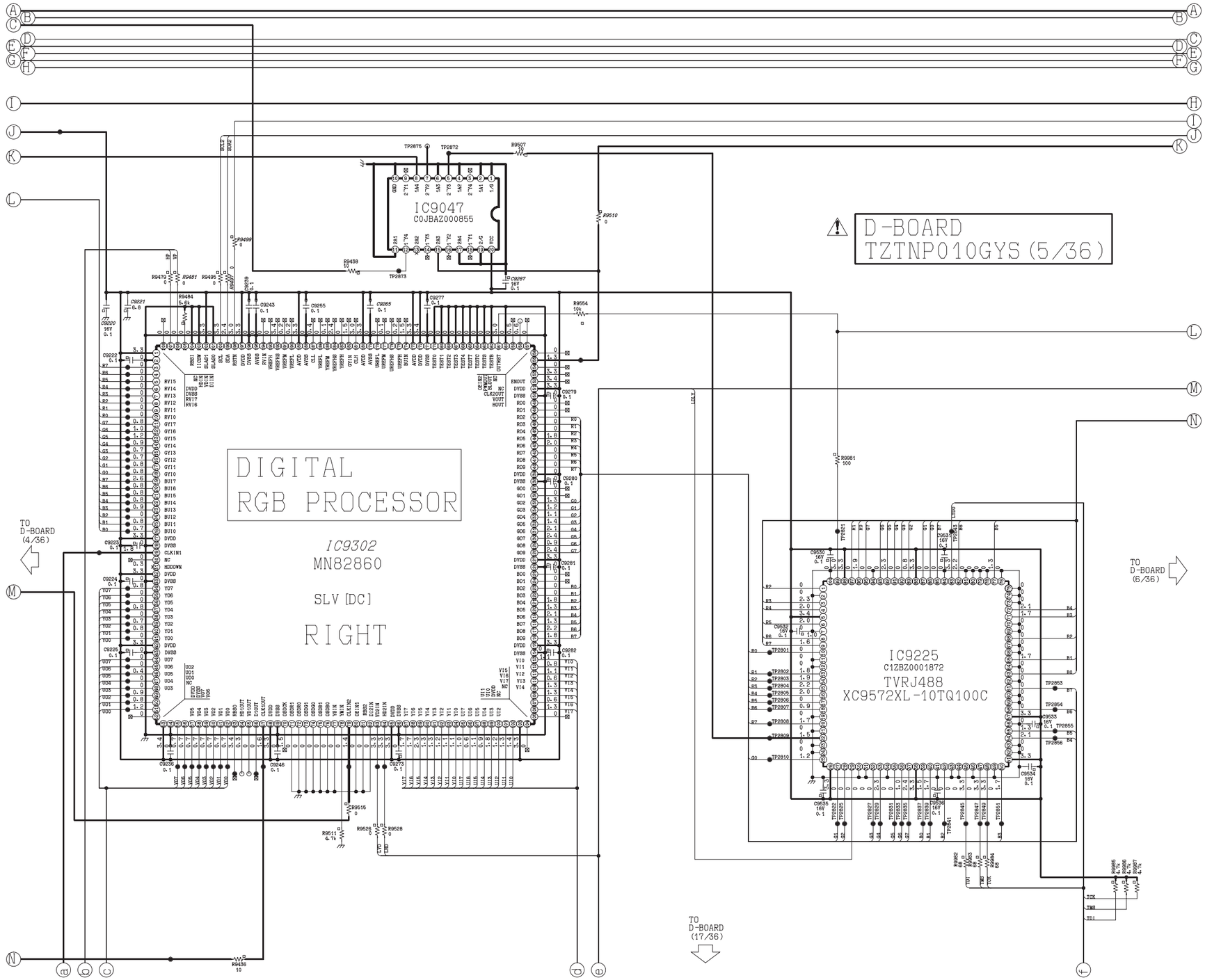
13.28. D-Board (3/36) Schematic Diagram



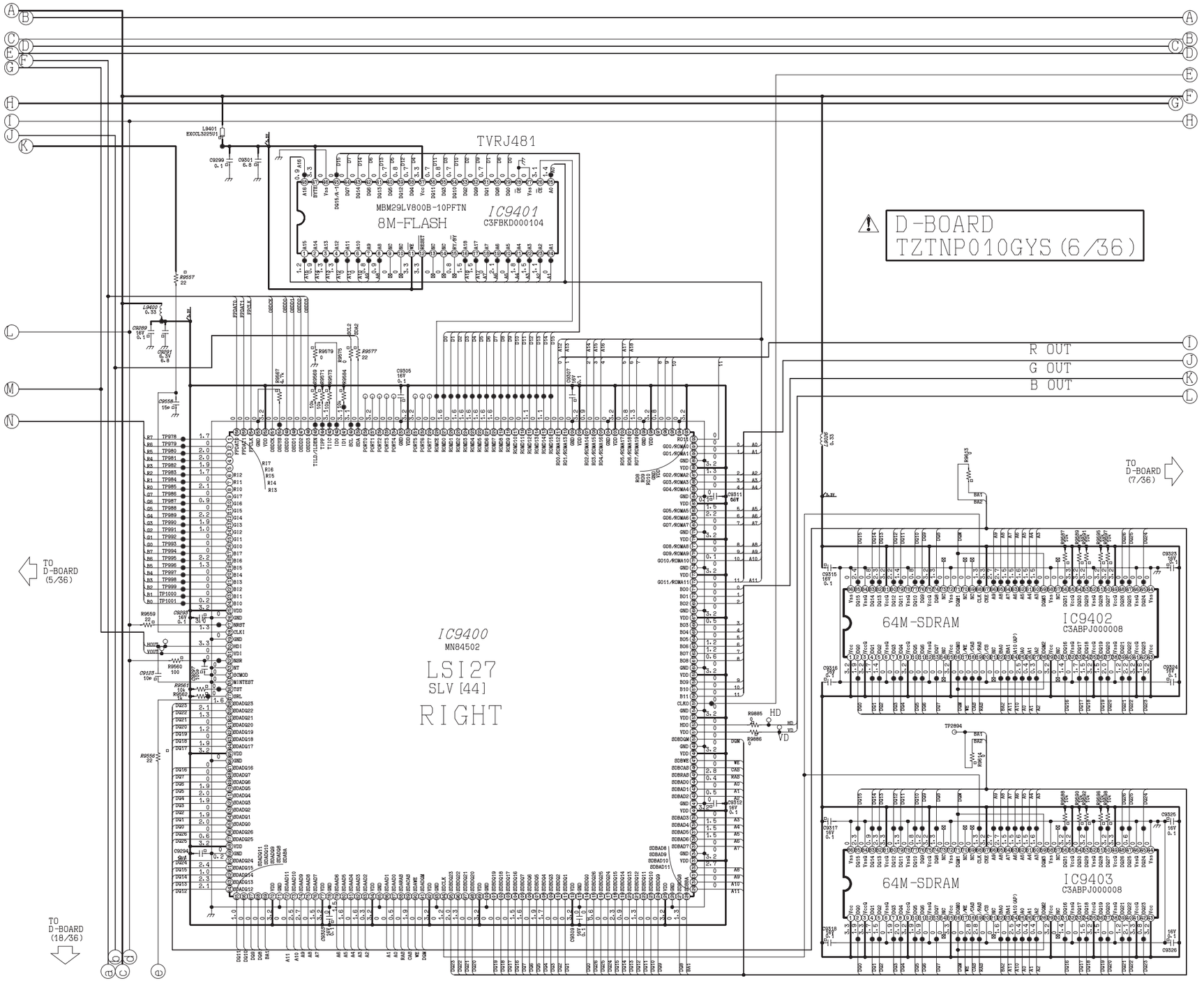
13.29. D-Board (4/36) Schematic Diagram



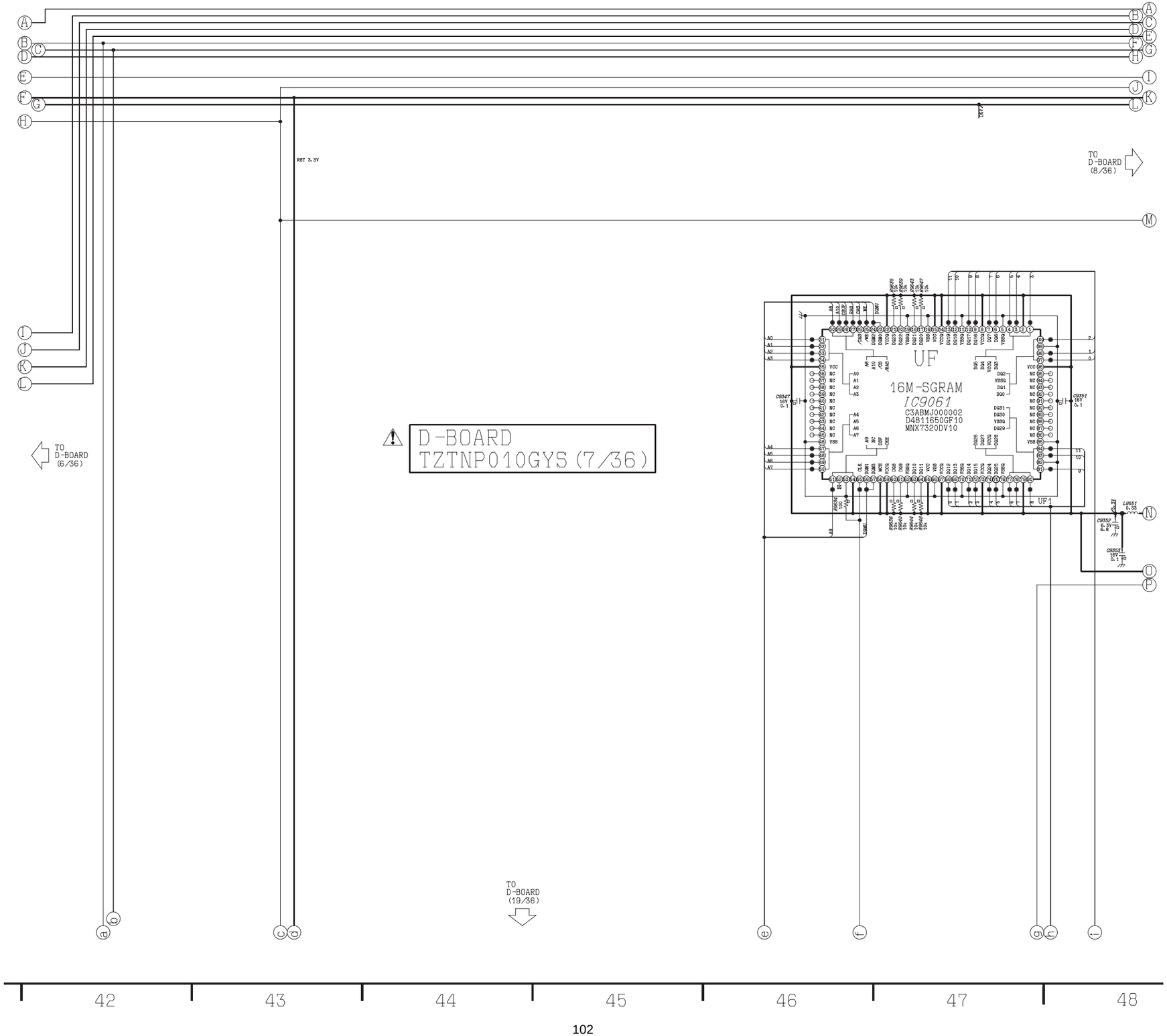
13.30. D-Board (5/36) Schematic Diagram



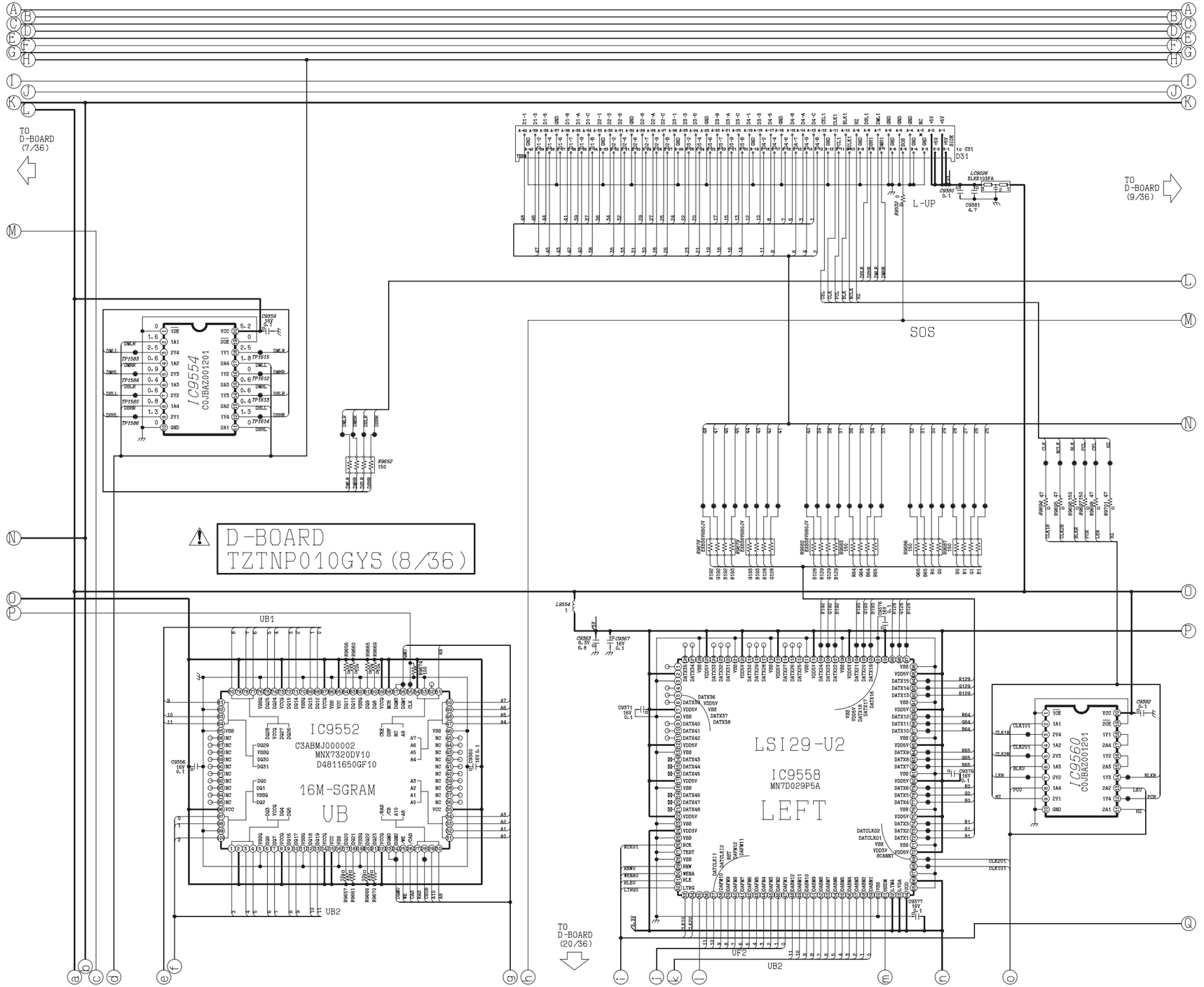
13.31. D-Board (6/36) Schematic Diagram



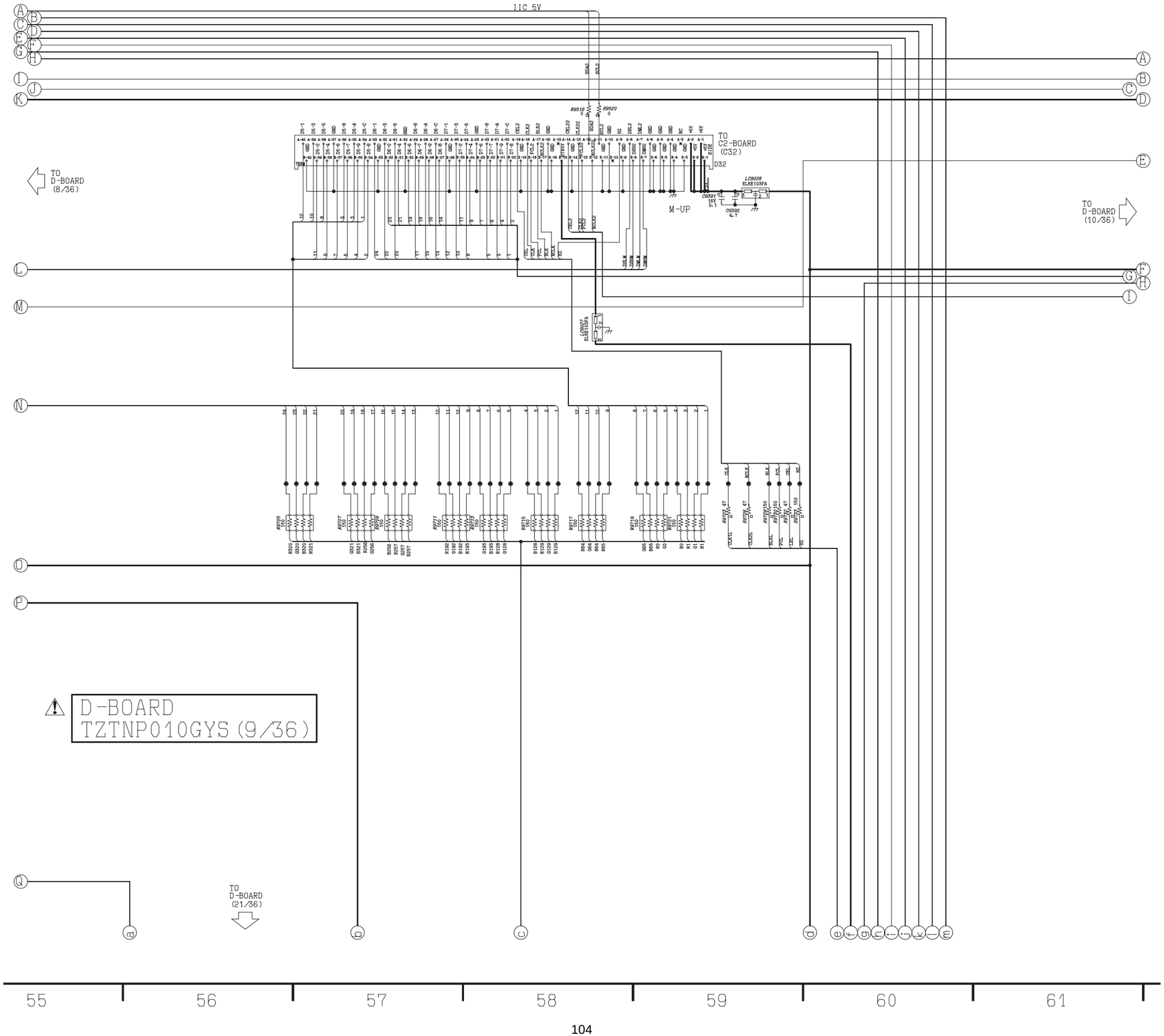
13.32. D-Board (7/36) Schematic Diagram



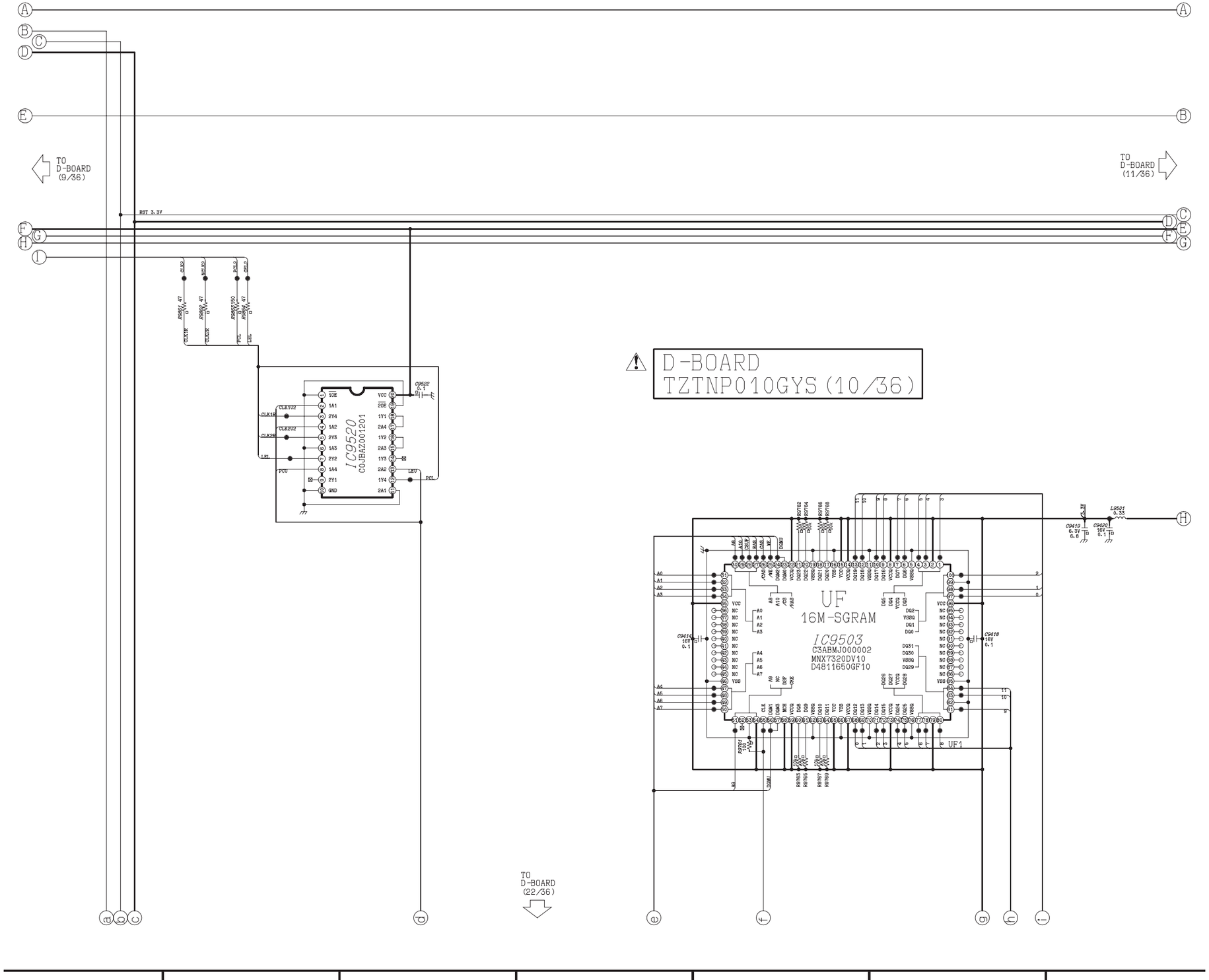
13.33. D-Board (8/36) Schematic Diagram



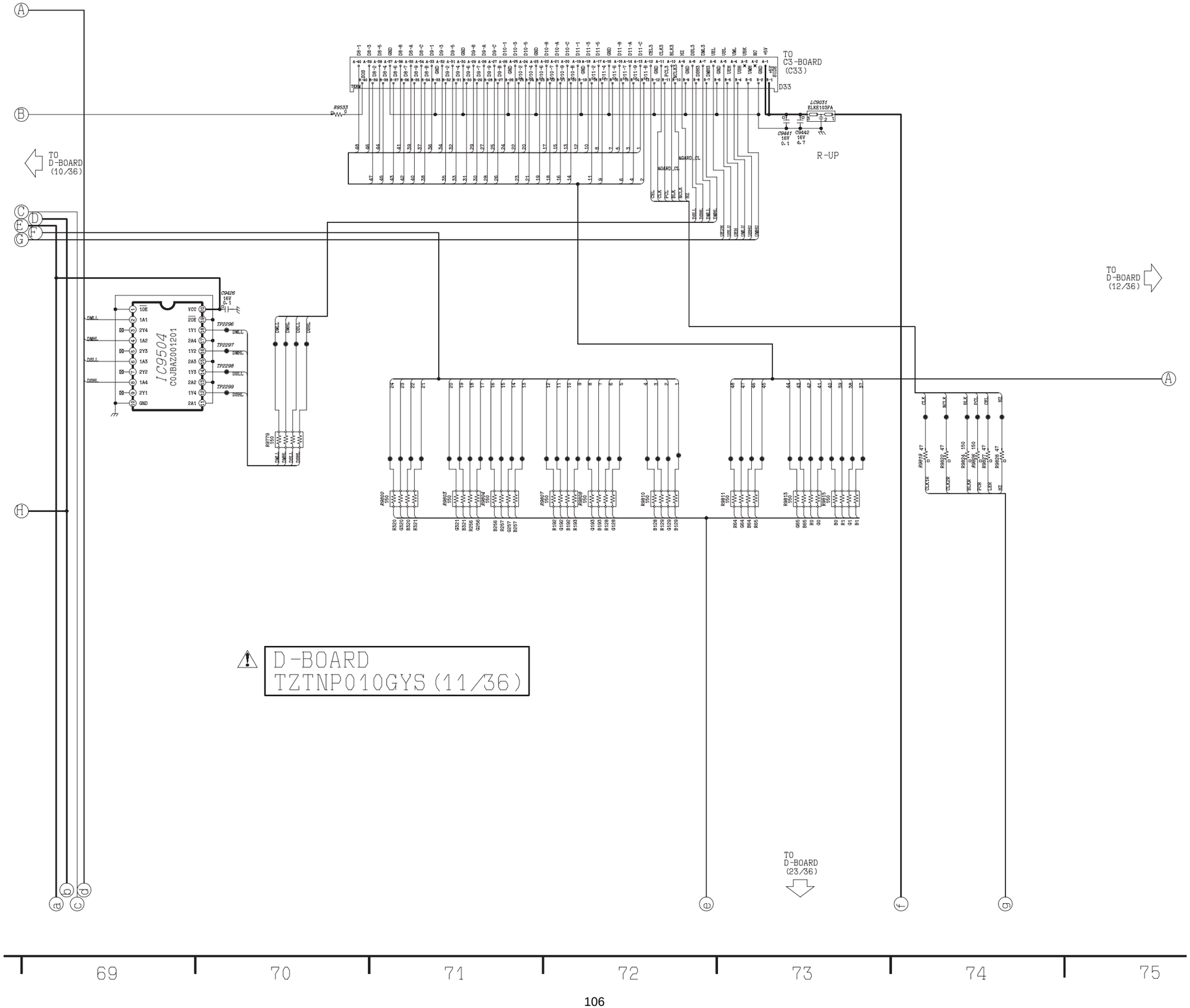
13.34. D-Board (9/36) Schematic Diagram



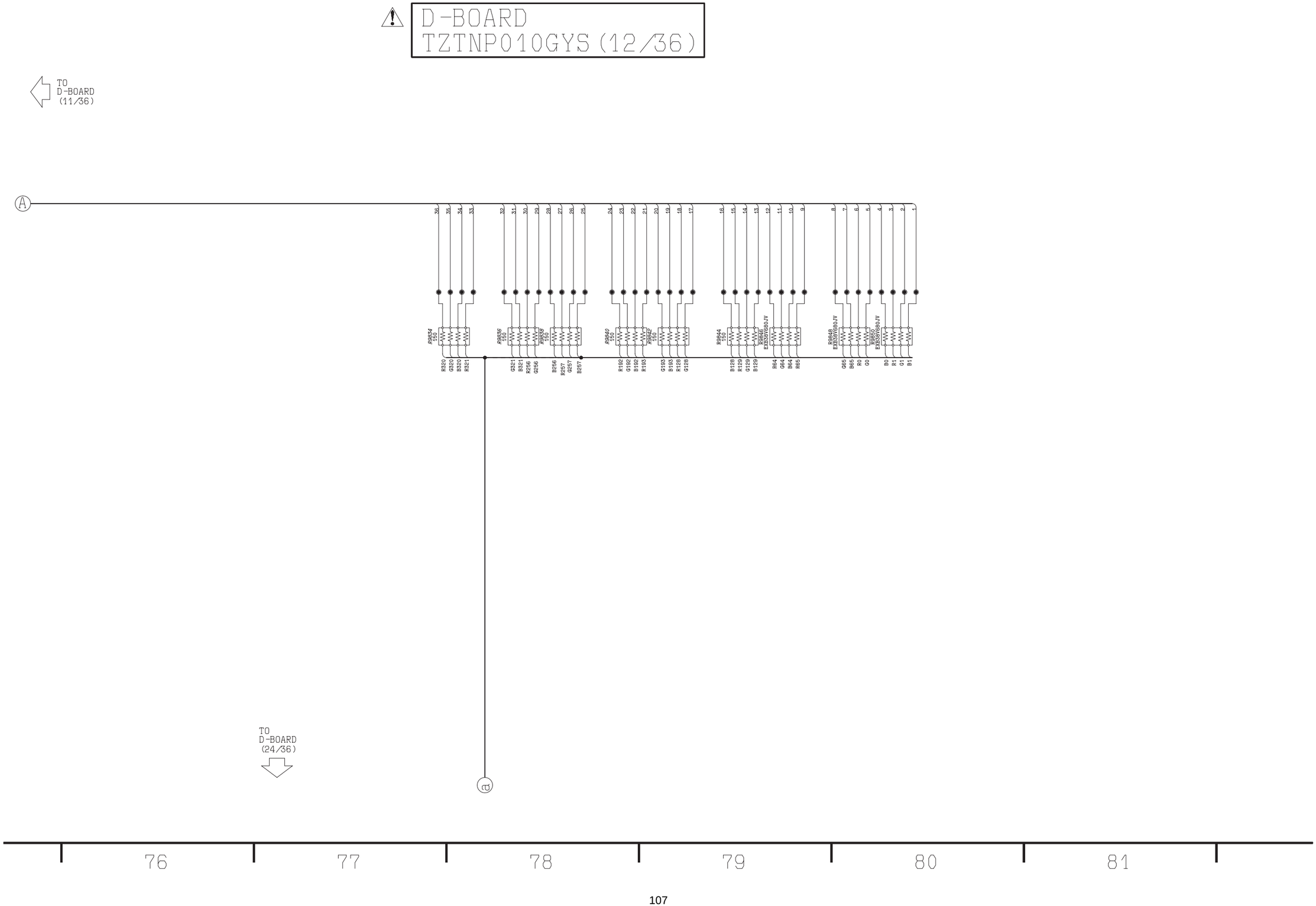
13.35. D-Board (10/36) Schematic Diagram



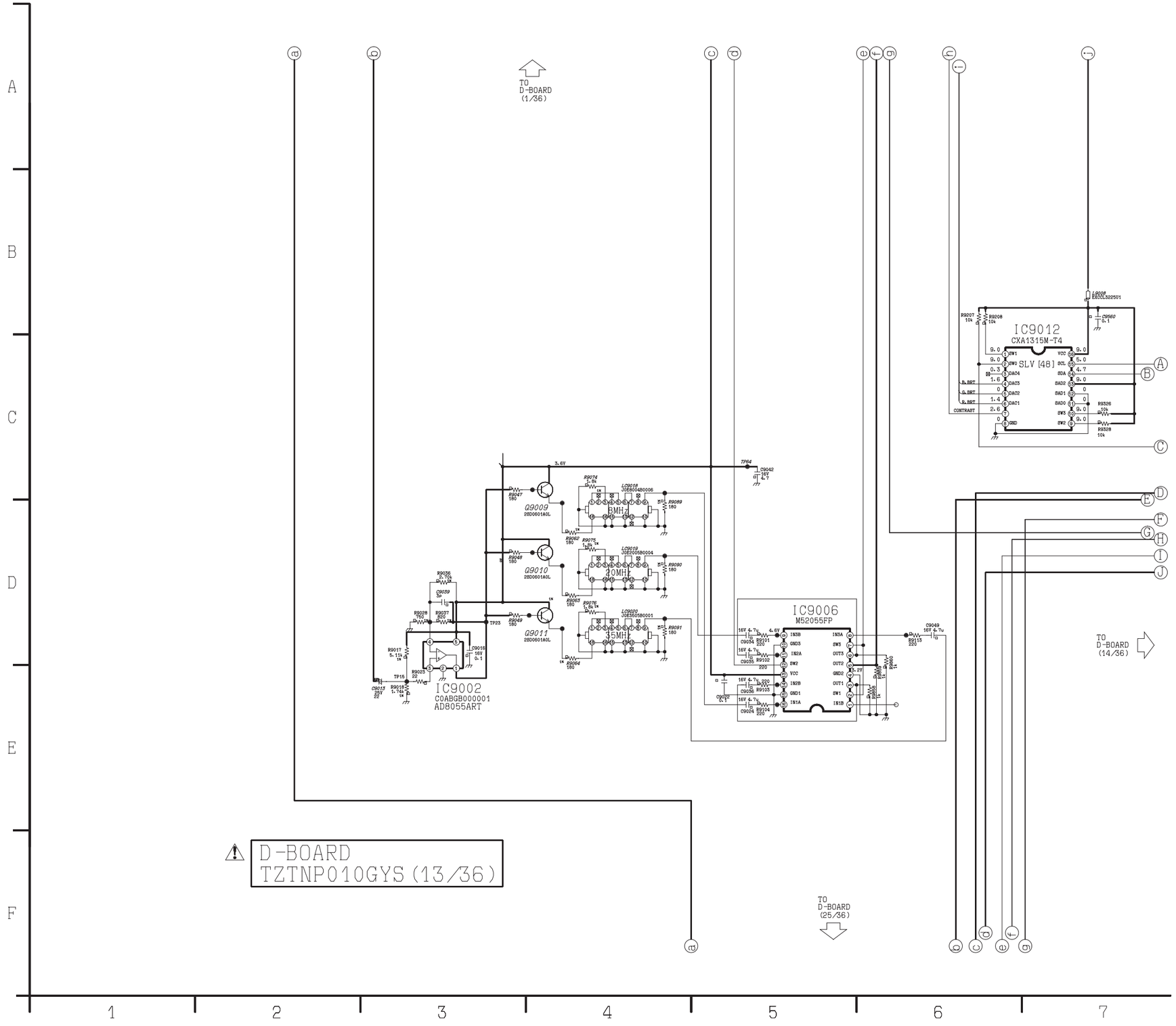
13.36. D-Board (11/36) Schematic Diagram



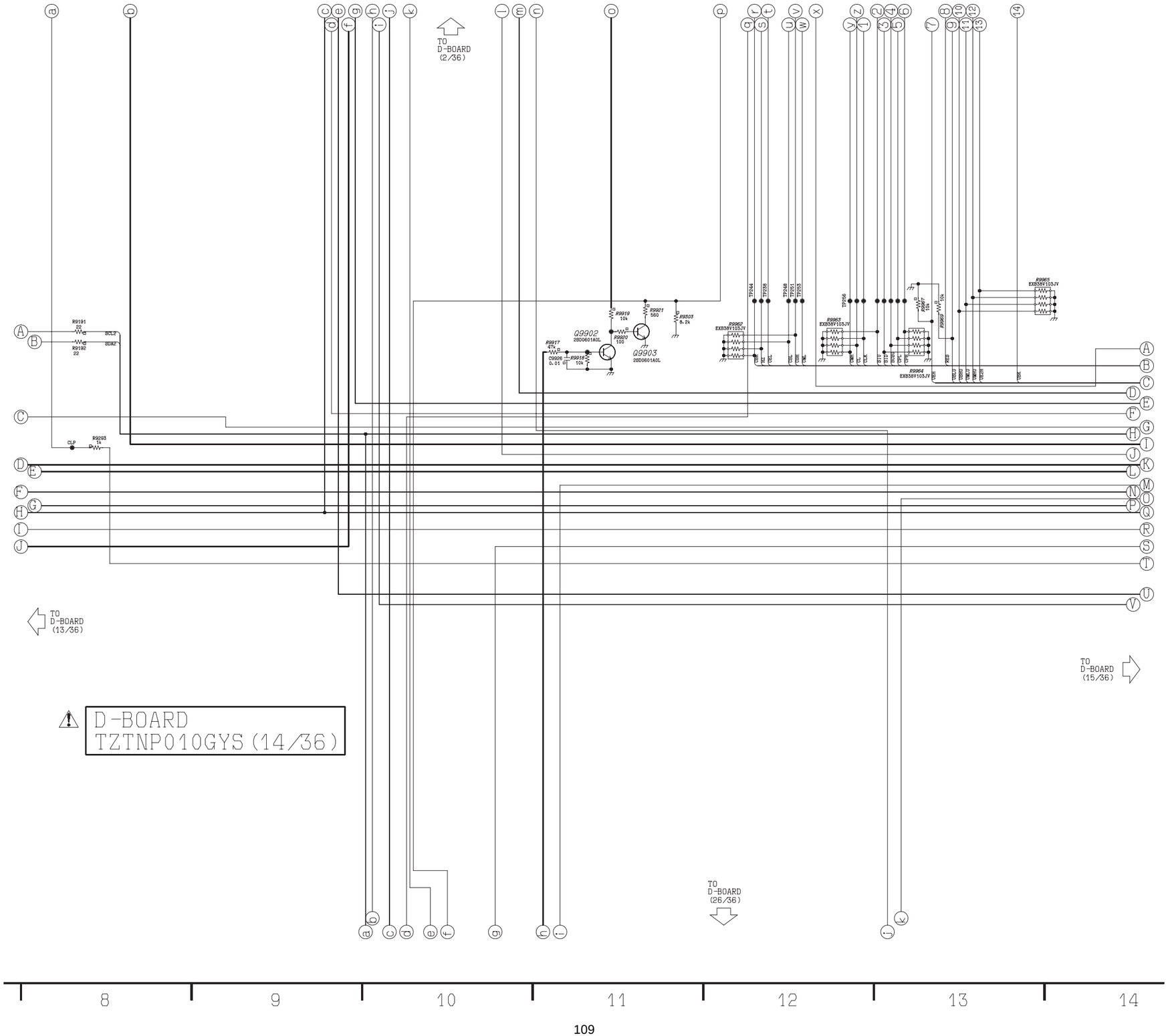
13.37. D-Board (12/36) Schematic Diagram



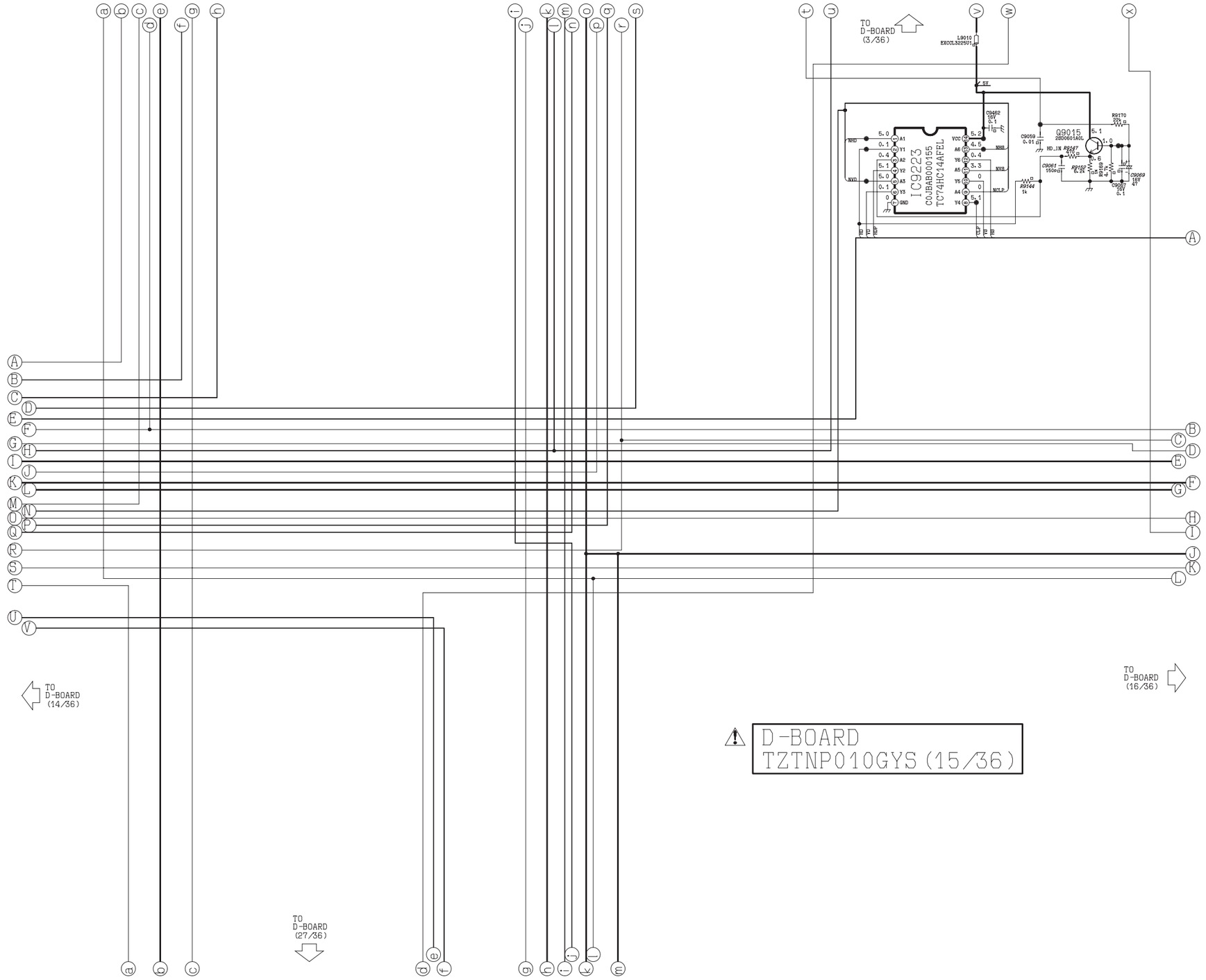
13.38. D-Board (13/36) Schematic Diagram



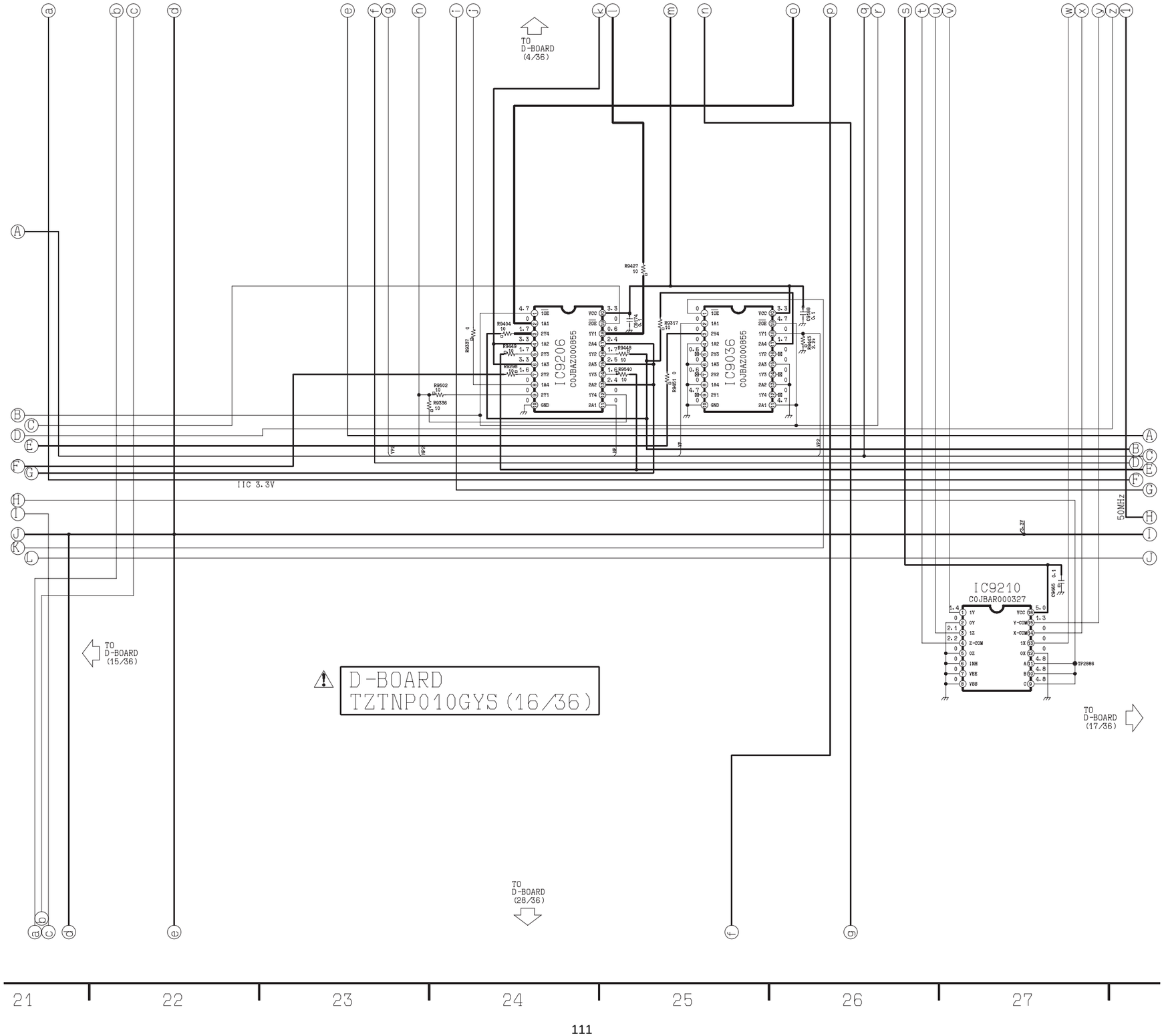
13.39. D-Board (14/36) Schematic Diagram



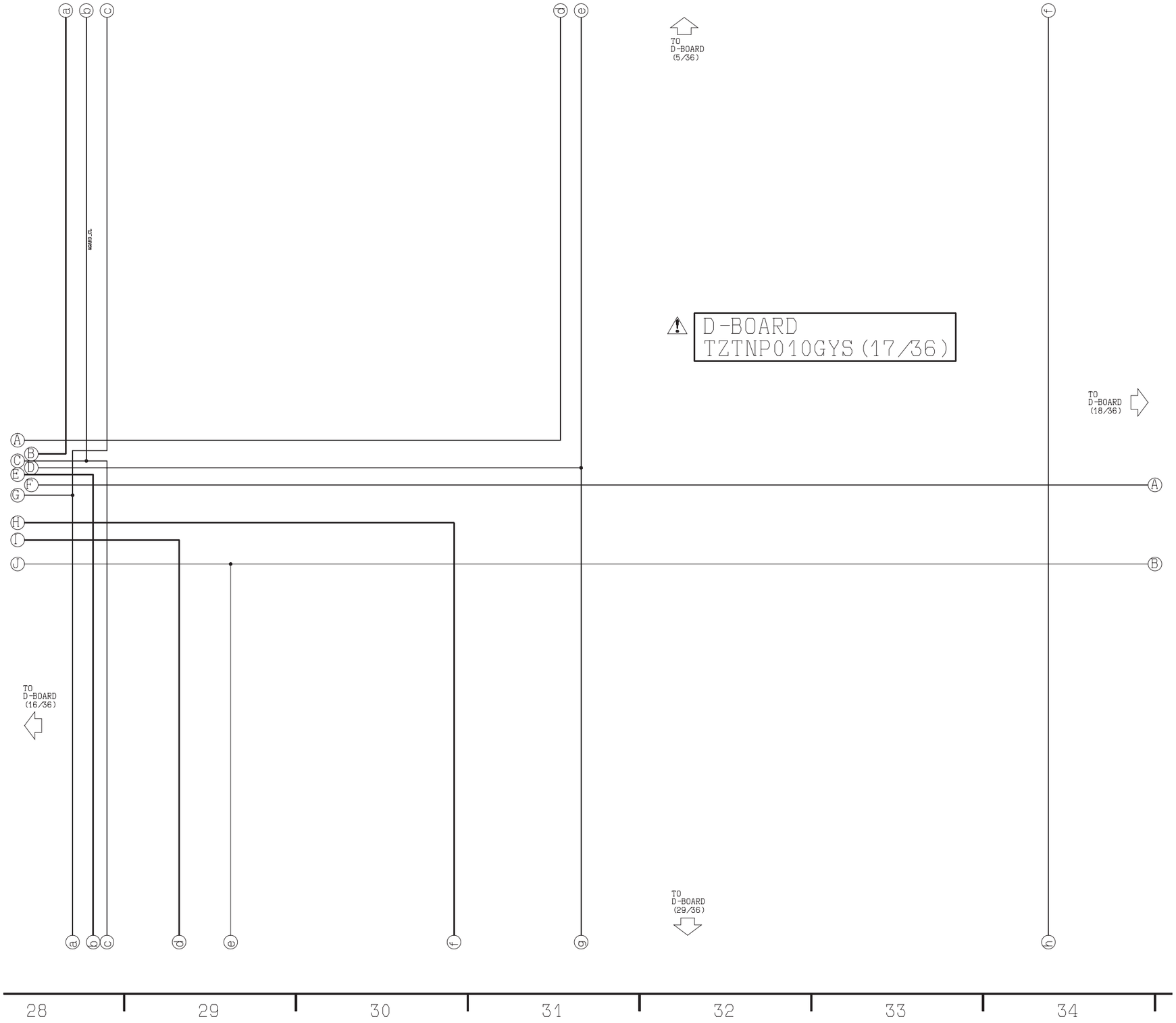
13.40. D-Board (15/36) Schematic Diagram



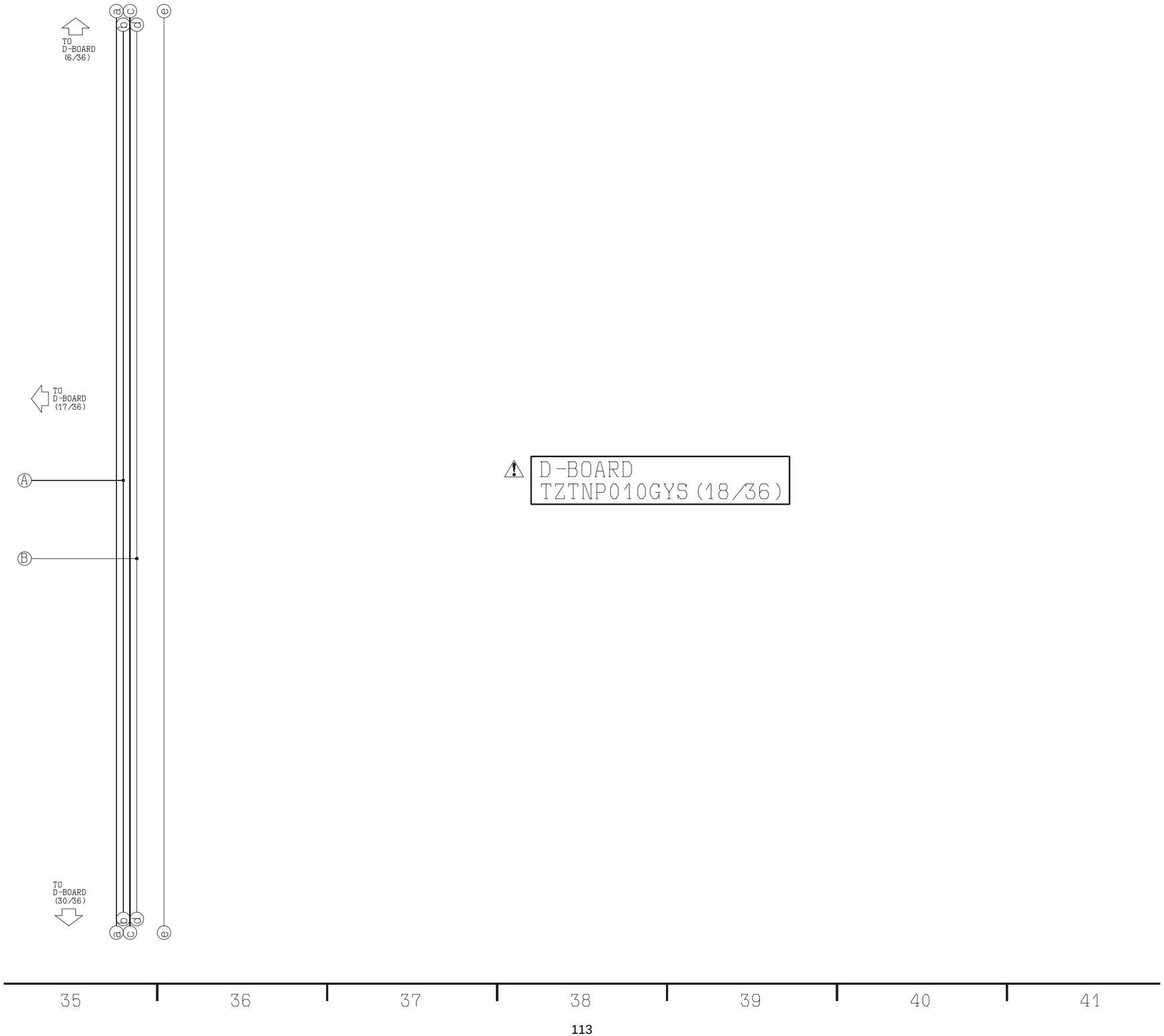
13.41. D-Board (16/36) Schematic Diagram



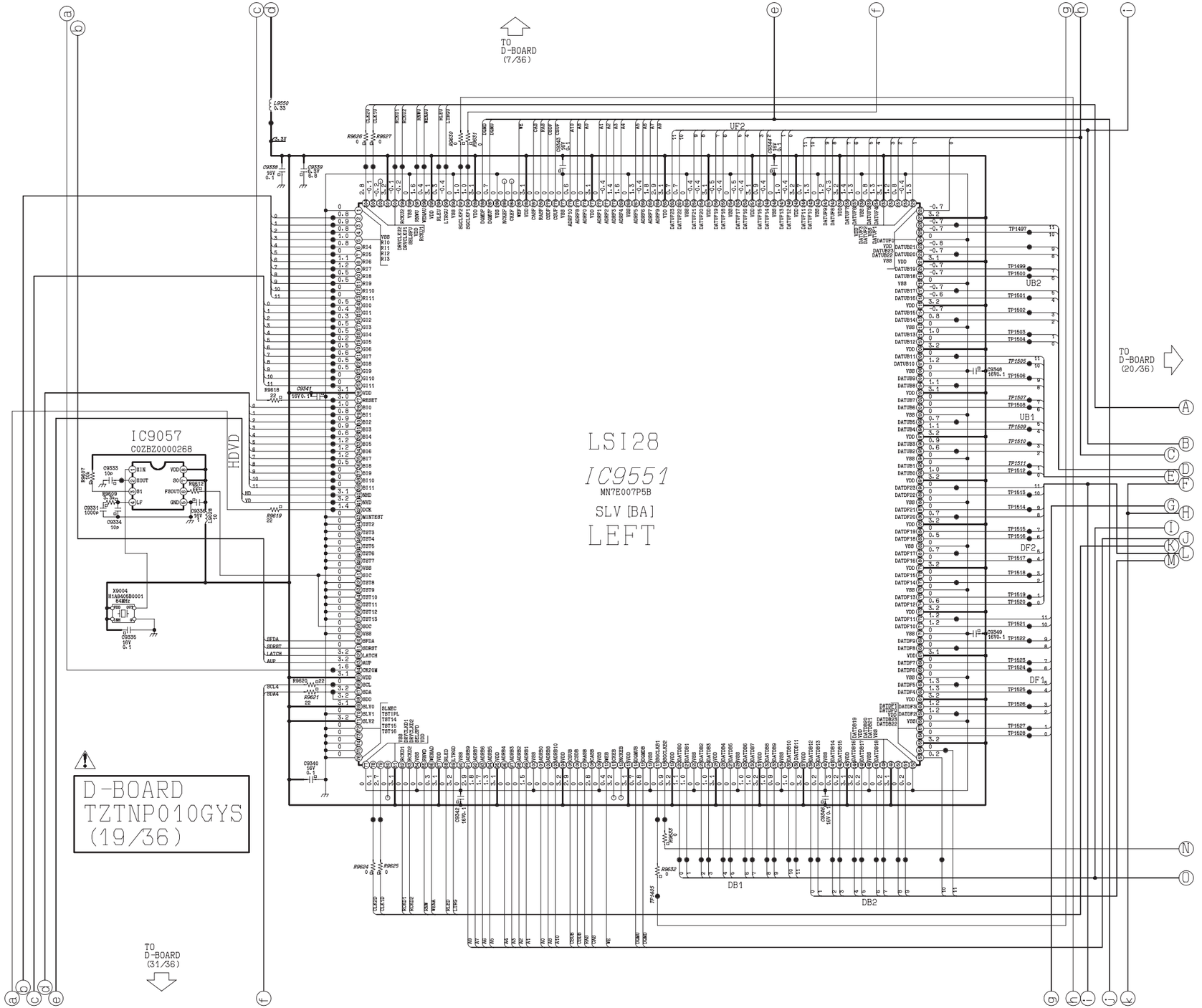
13.42. D-Board (17/36) Schematic Diagram



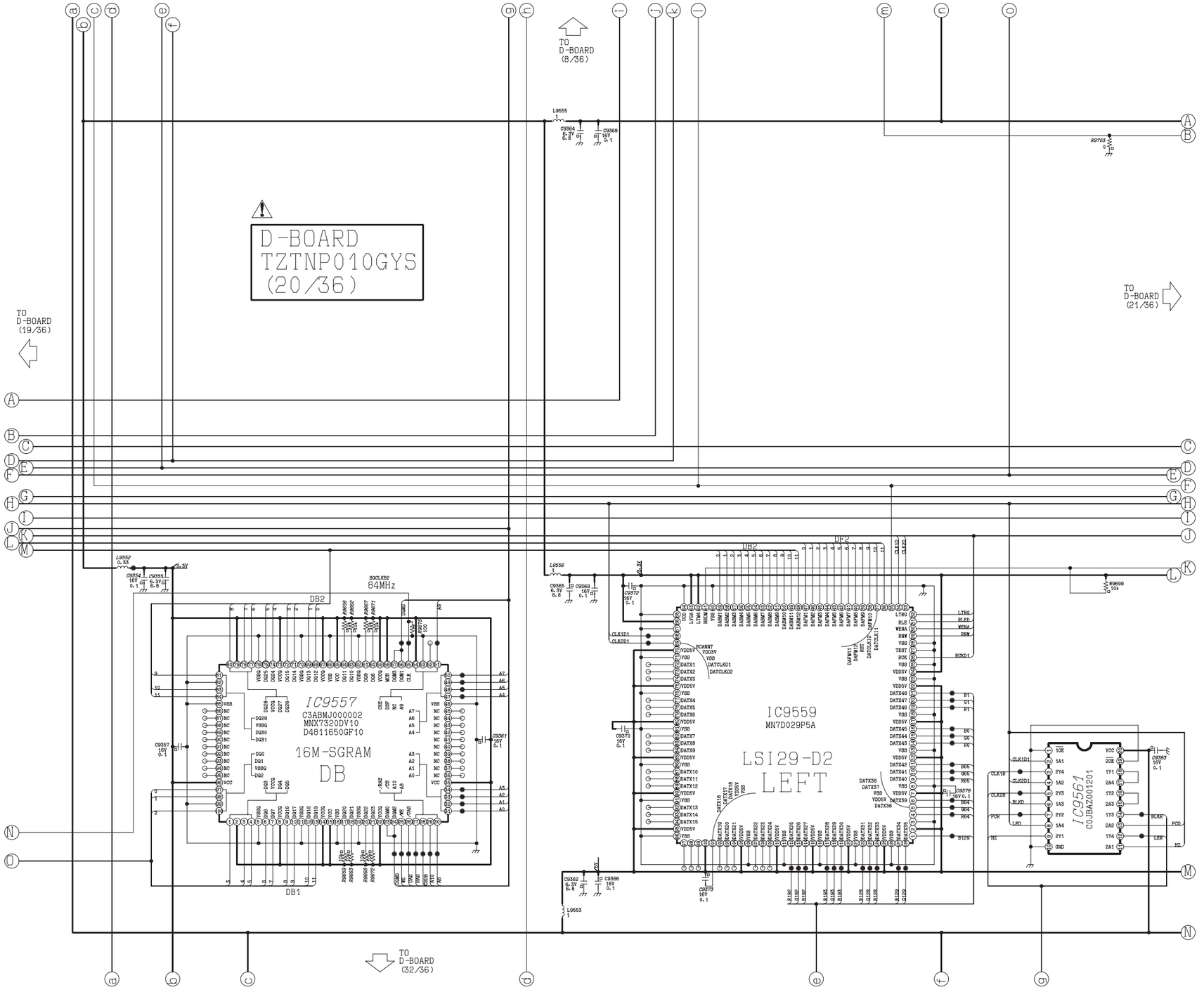
13.43. D-Board (18/36) Schematic Diagram



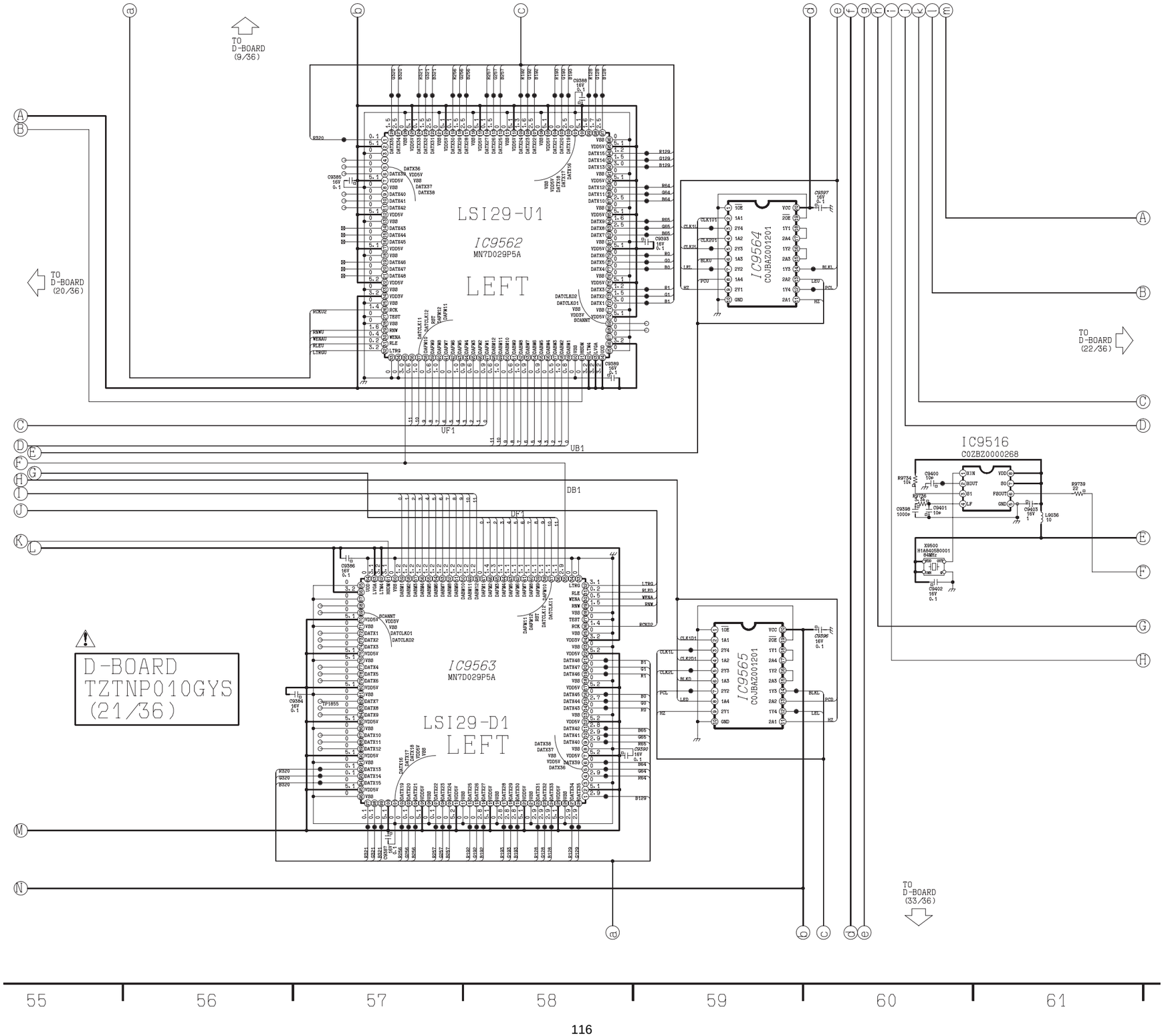
13.44. D-Board (19/36) Schematic Diagram



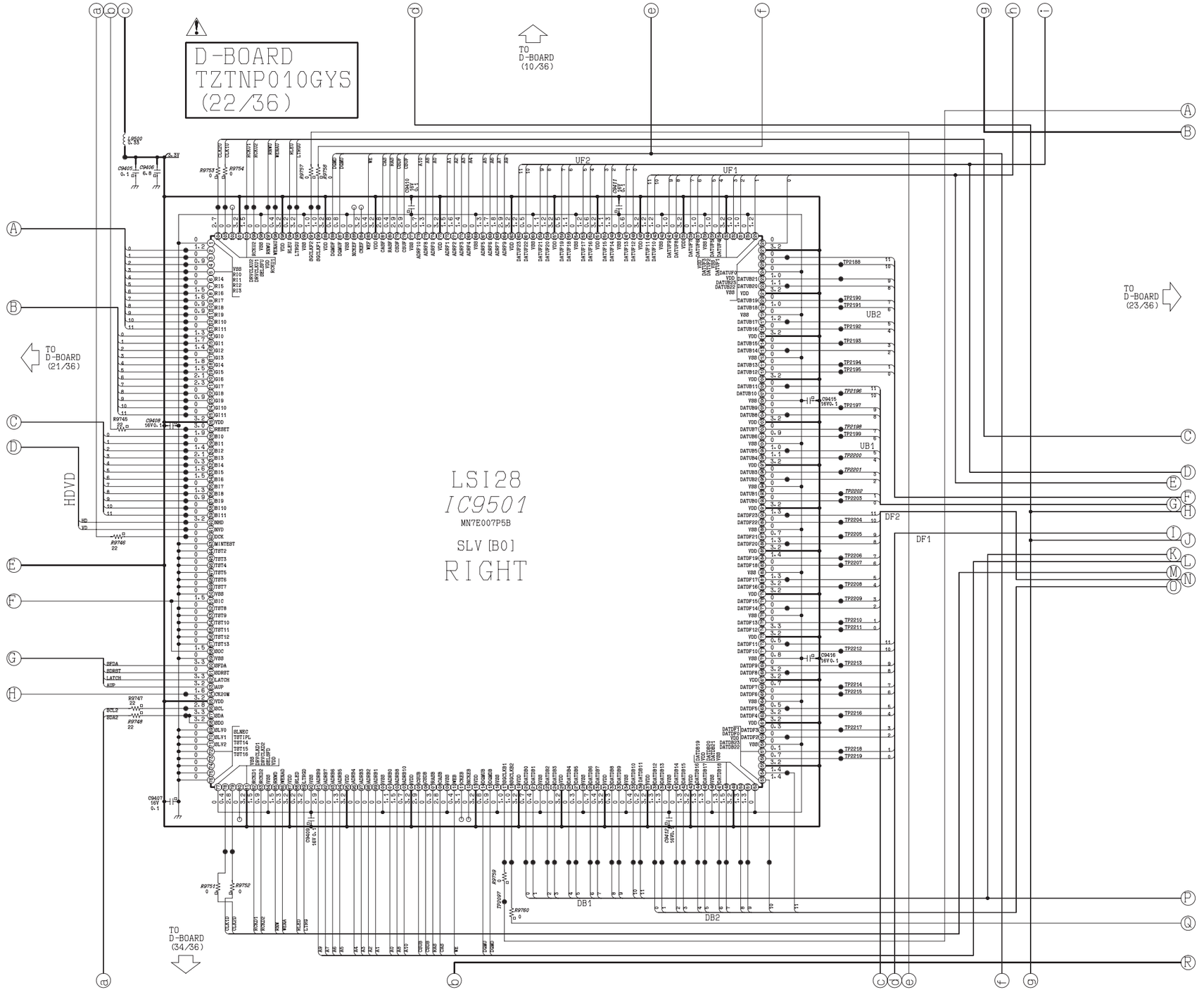
13.45. D-Board (20/36) Schematic Diagram



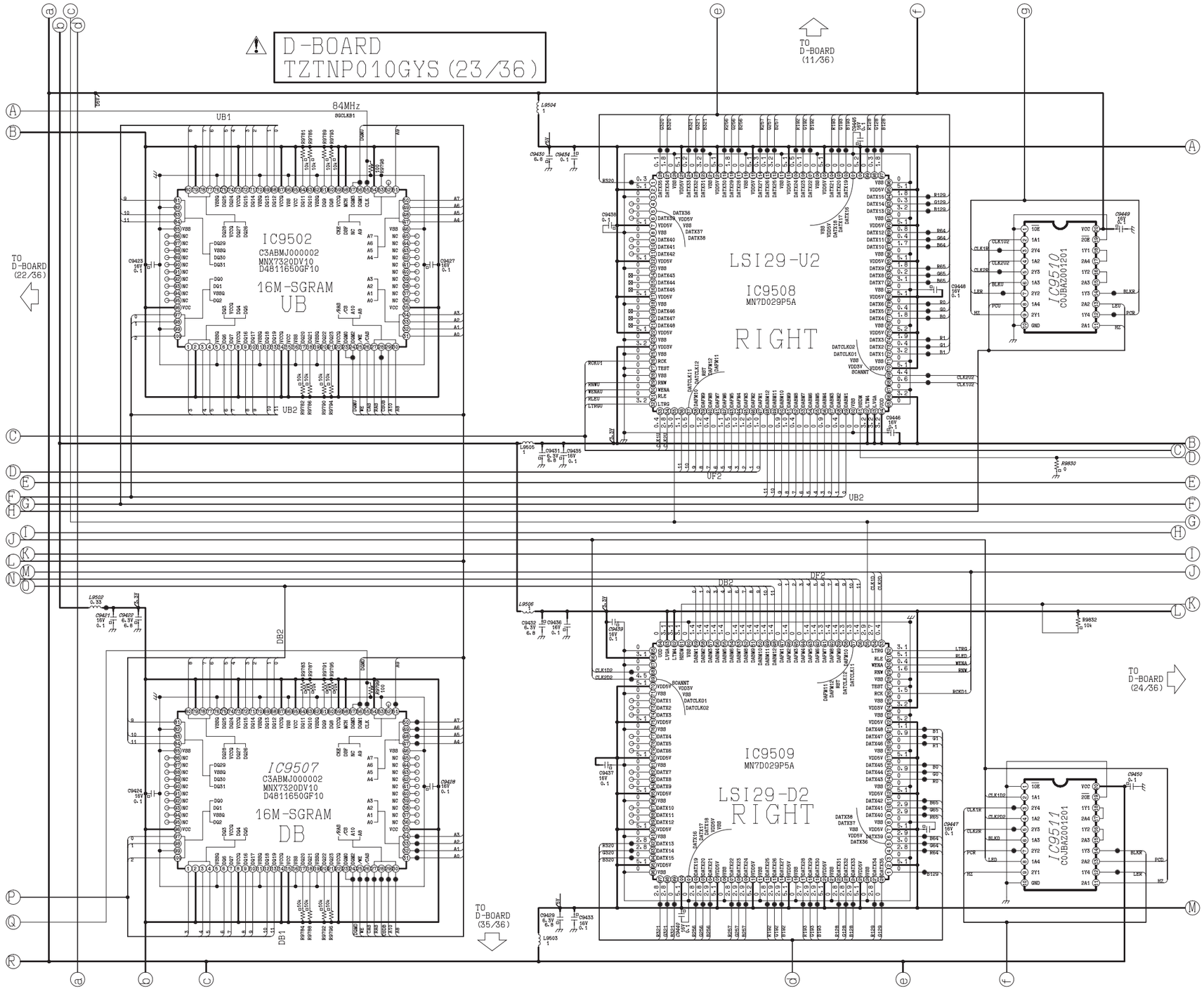
13.46. D-Board (21/36) Schematic Diagram



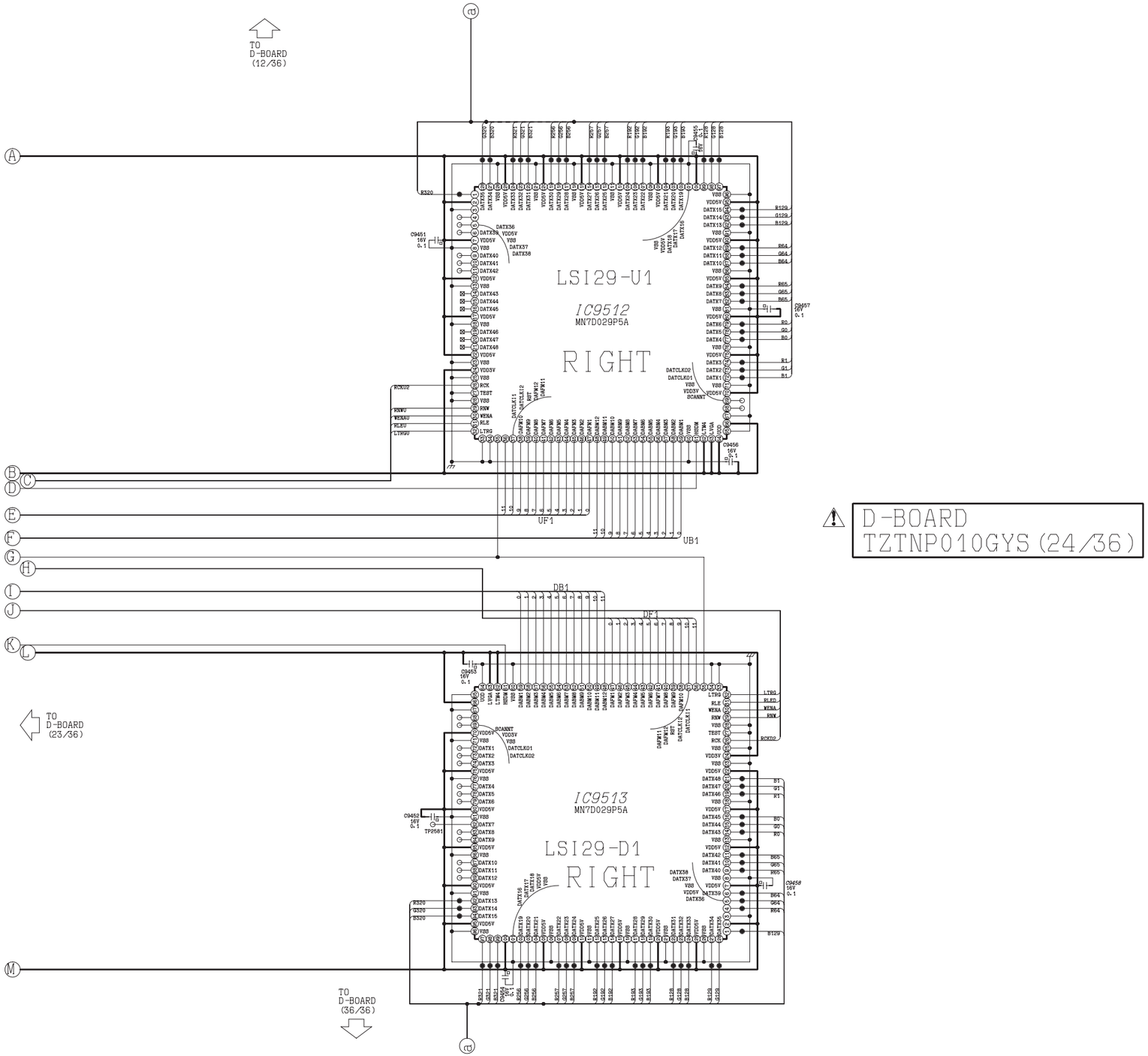
13.47. D-Board (22/36) Schematic Diagram



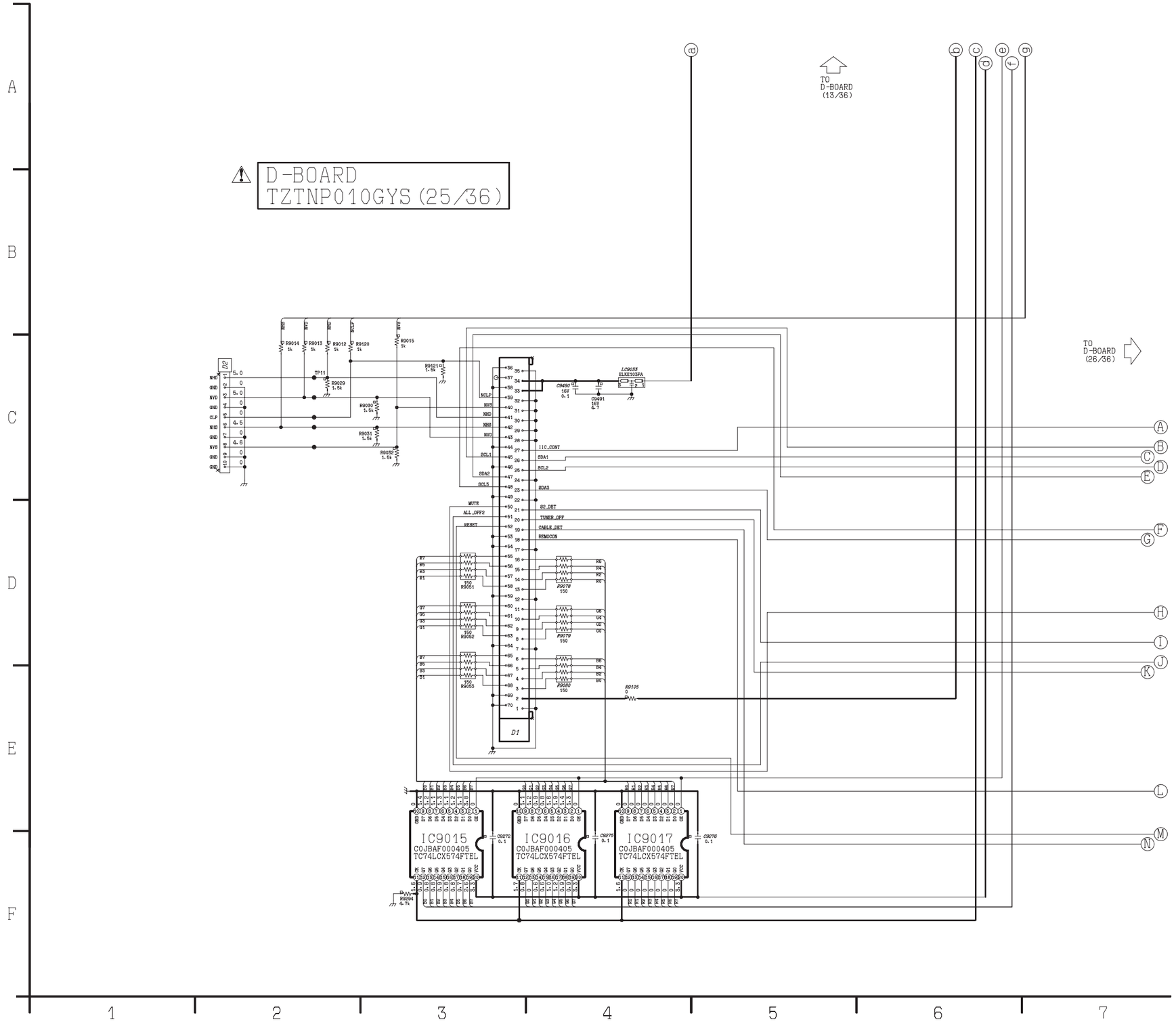
13.48. D-Board (23/36) Schematic Diagram



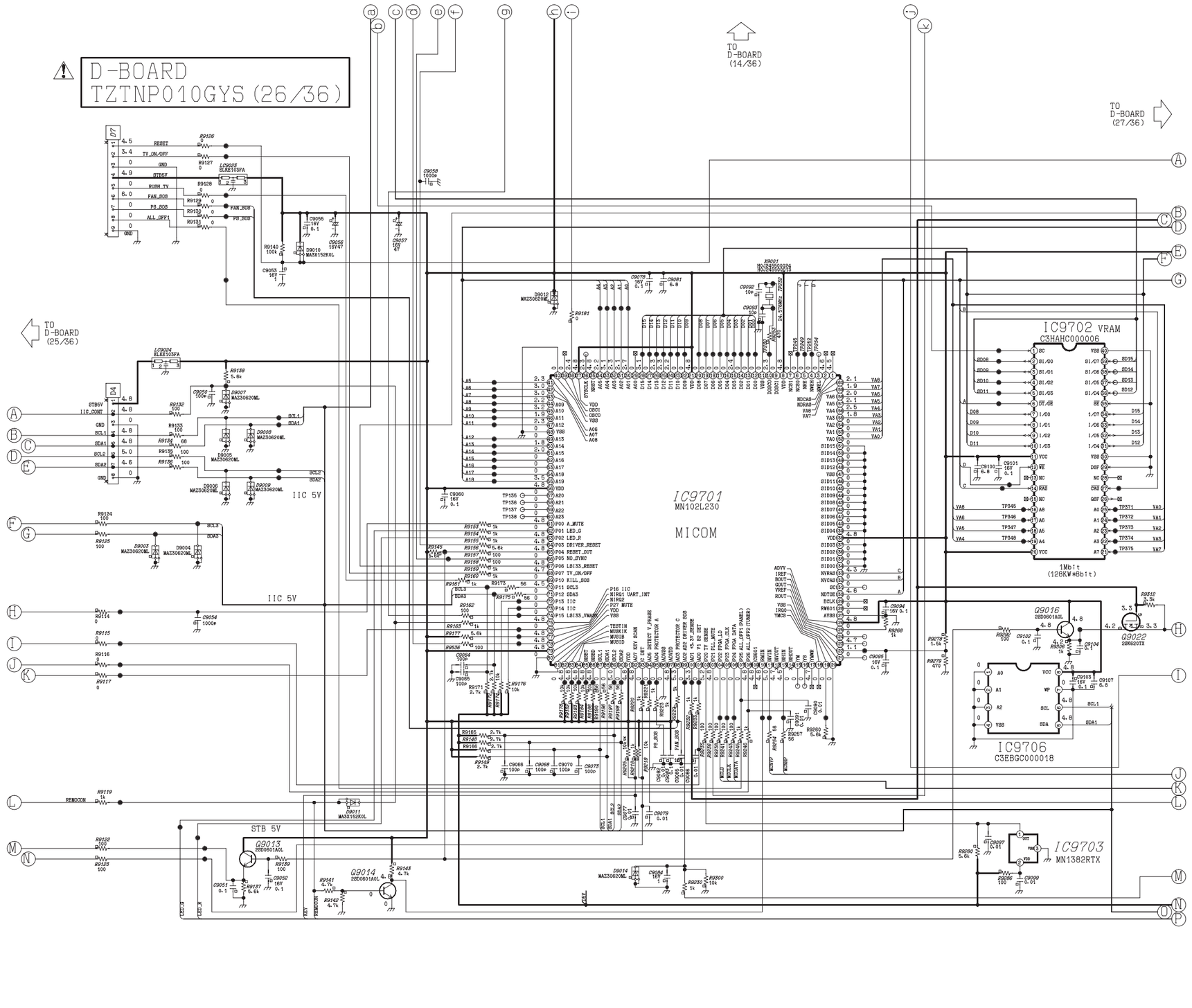
13.49. D-Board (24/36) Schematic Diagram



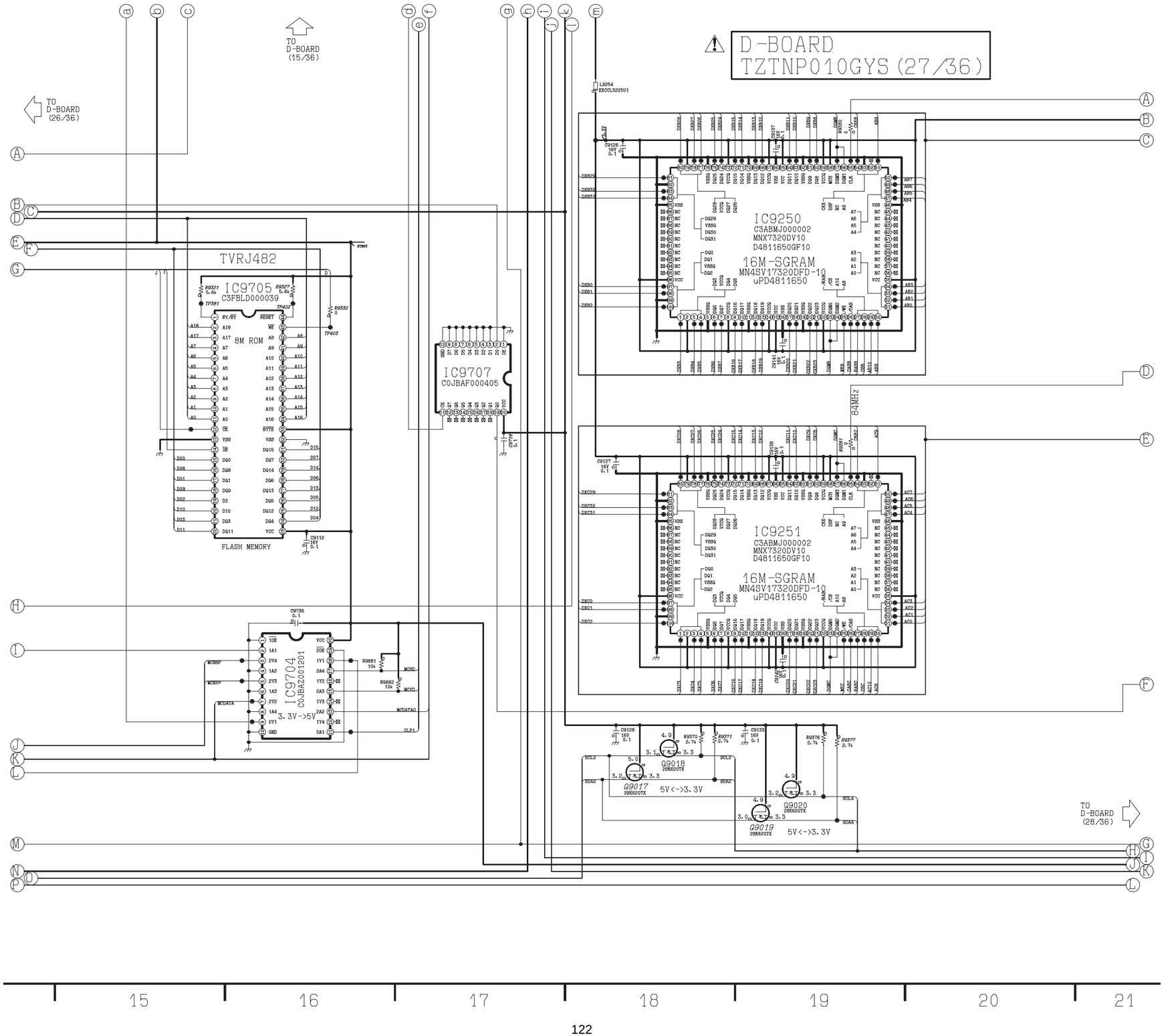
13.50. D-Board (25/36) Schematic Diagram



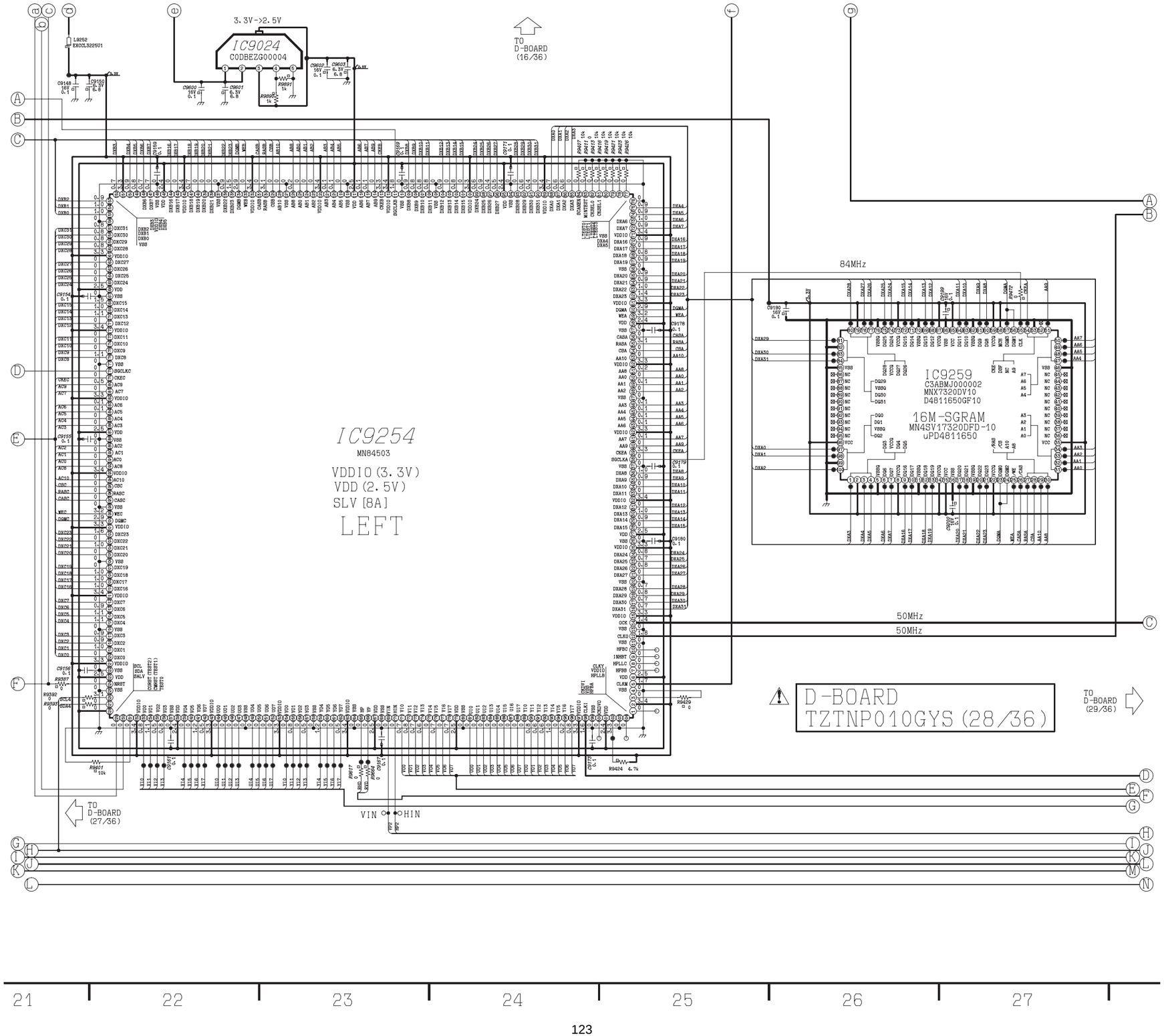
13.51. D-Board (26/36) Schematic Diagram



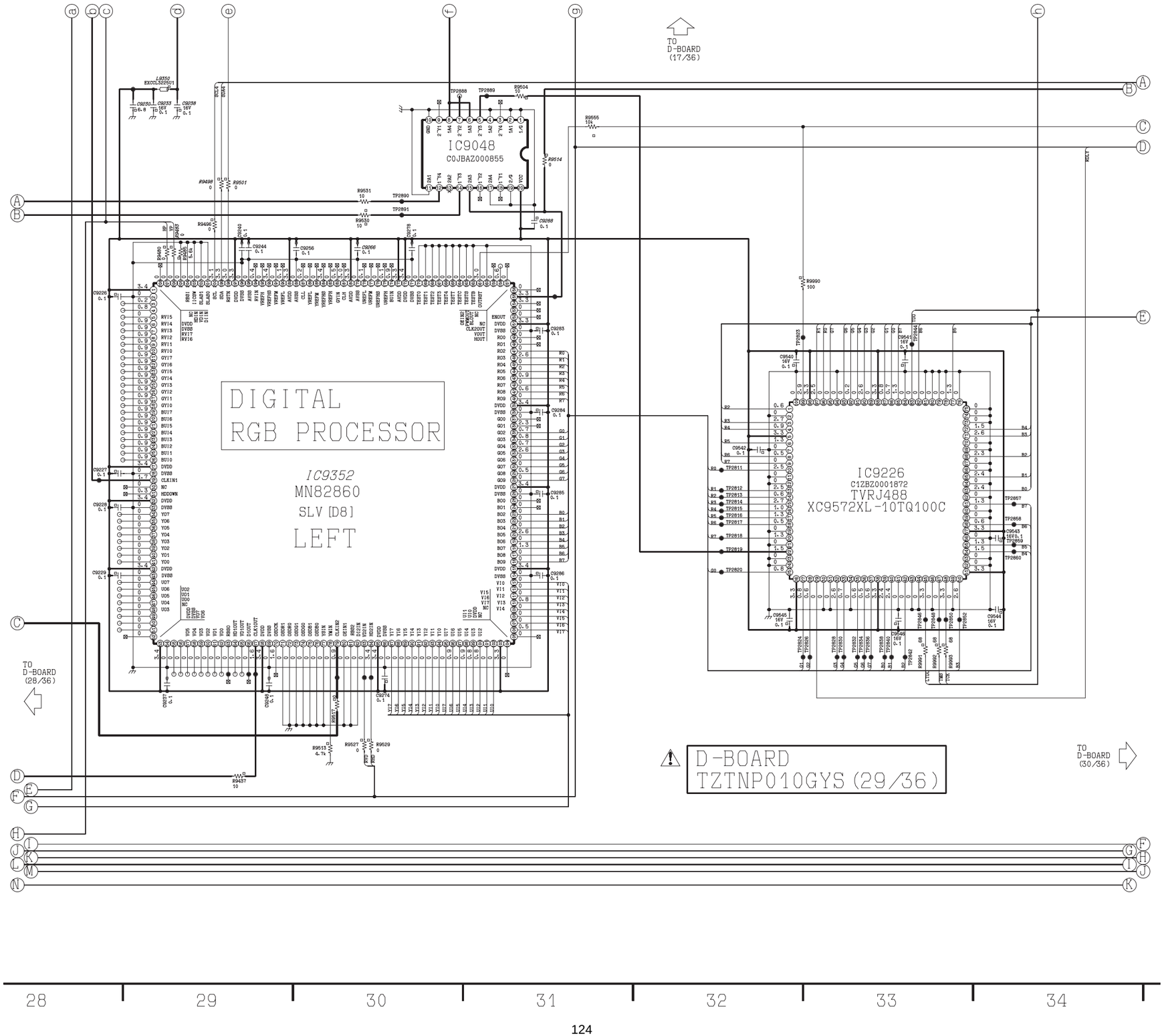
13.52. D-Board (27/36) Schematic Diagram



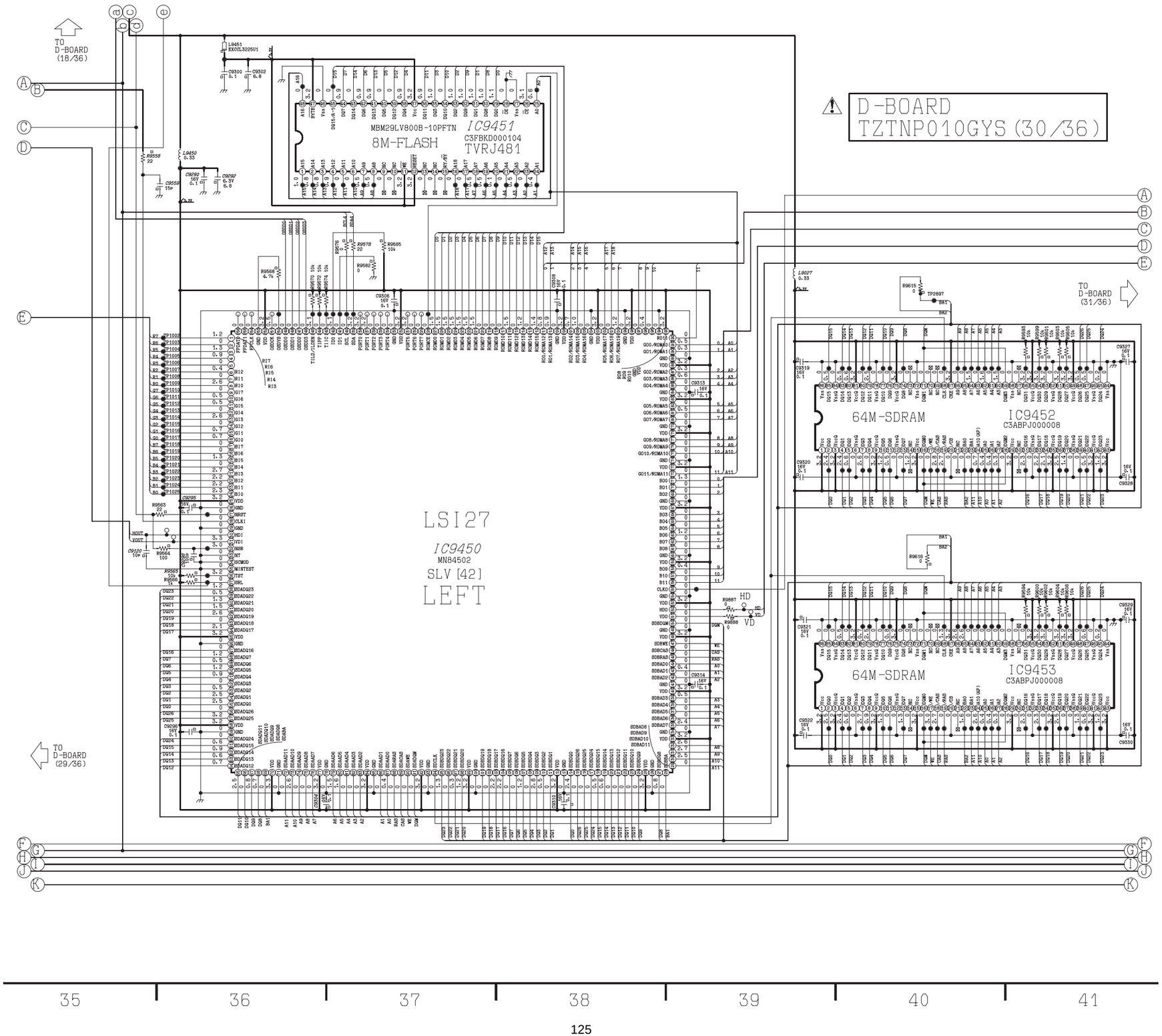
13.53. D-Board (28/36) Schematic Diagram



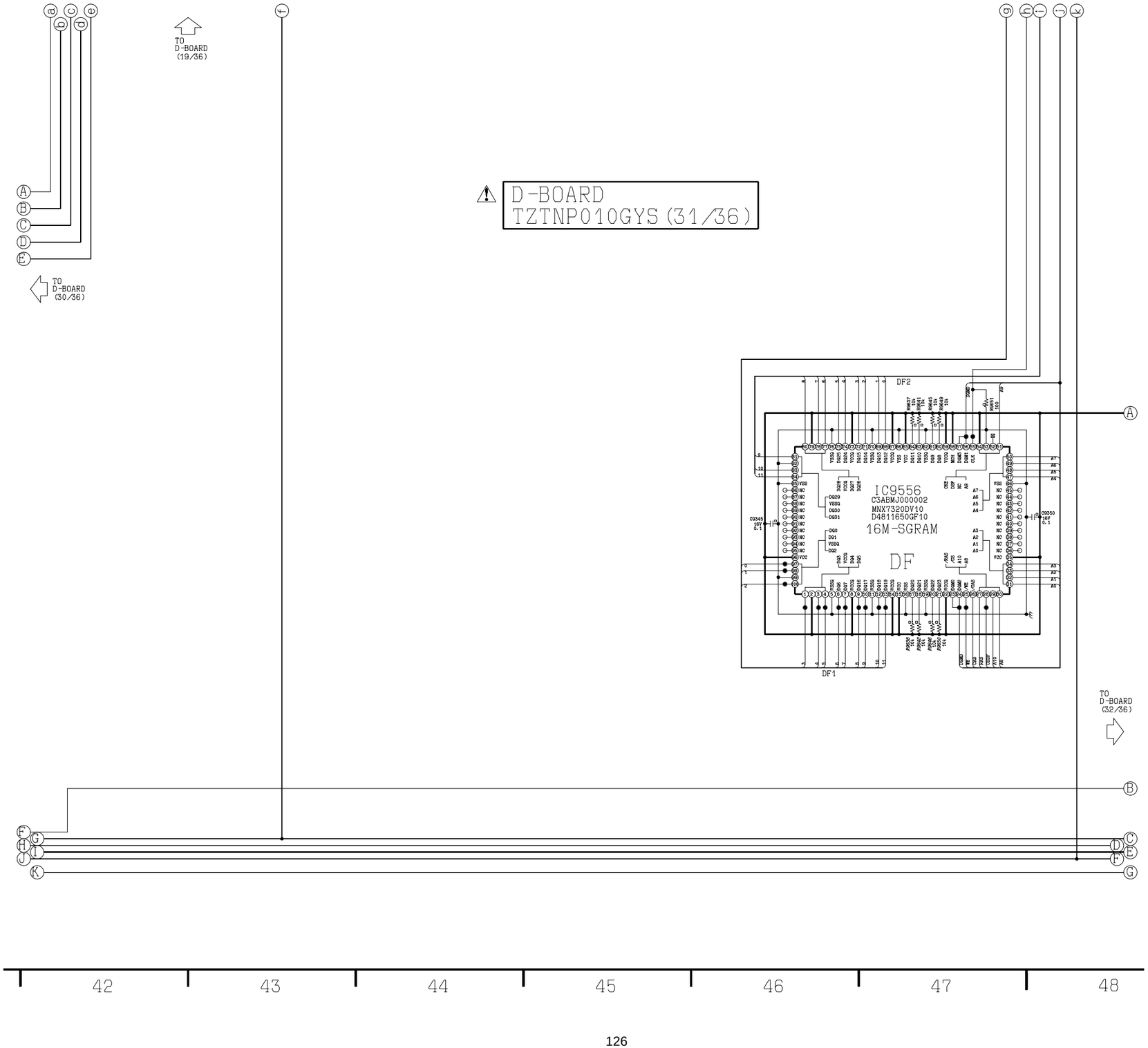
13.54. D-Board (29/36) Schematic Diagram



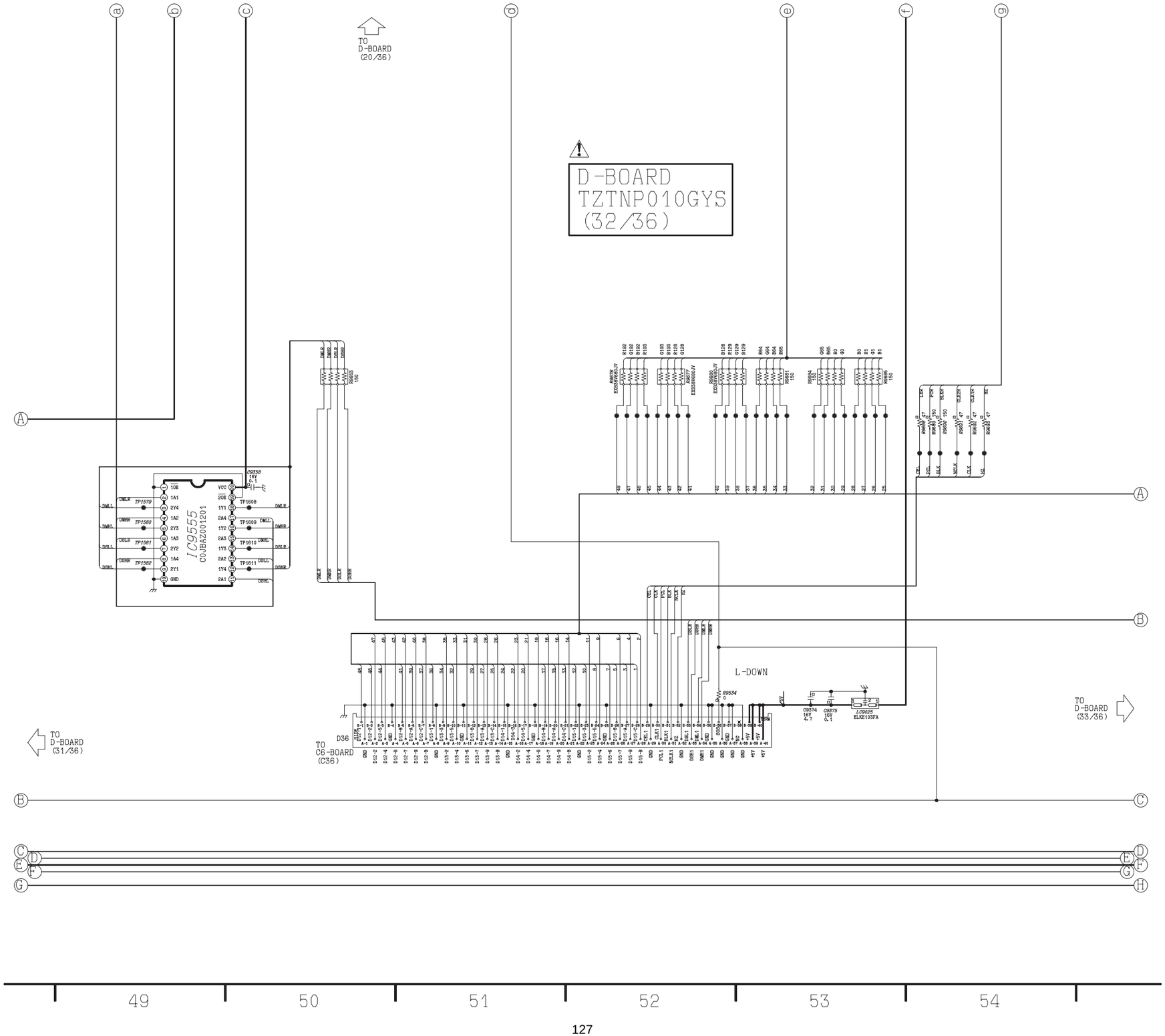
13.55. D-Board (30/36) Schematic Diagram



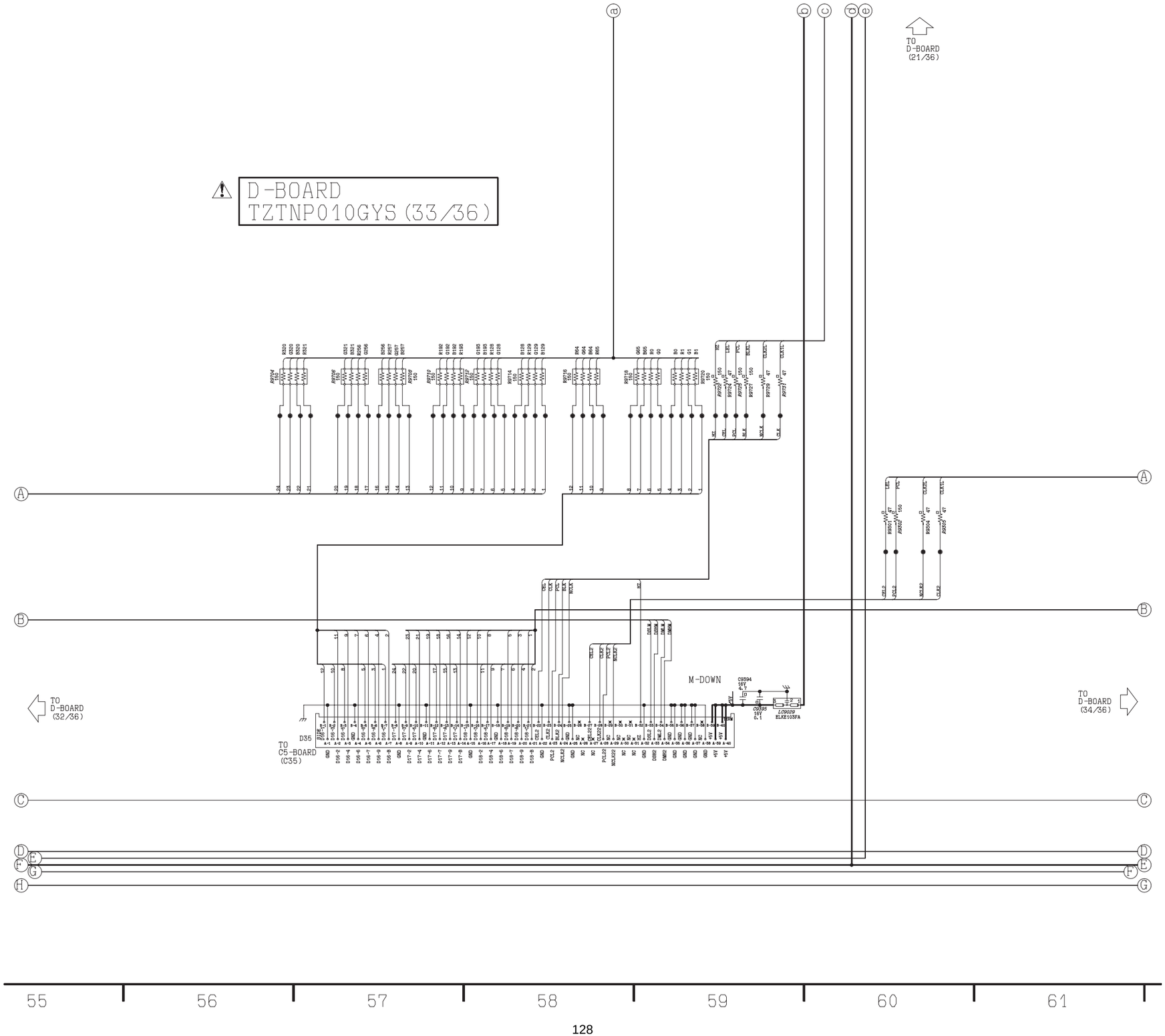
13.56. D-Board (31/36) Schematic Diagram



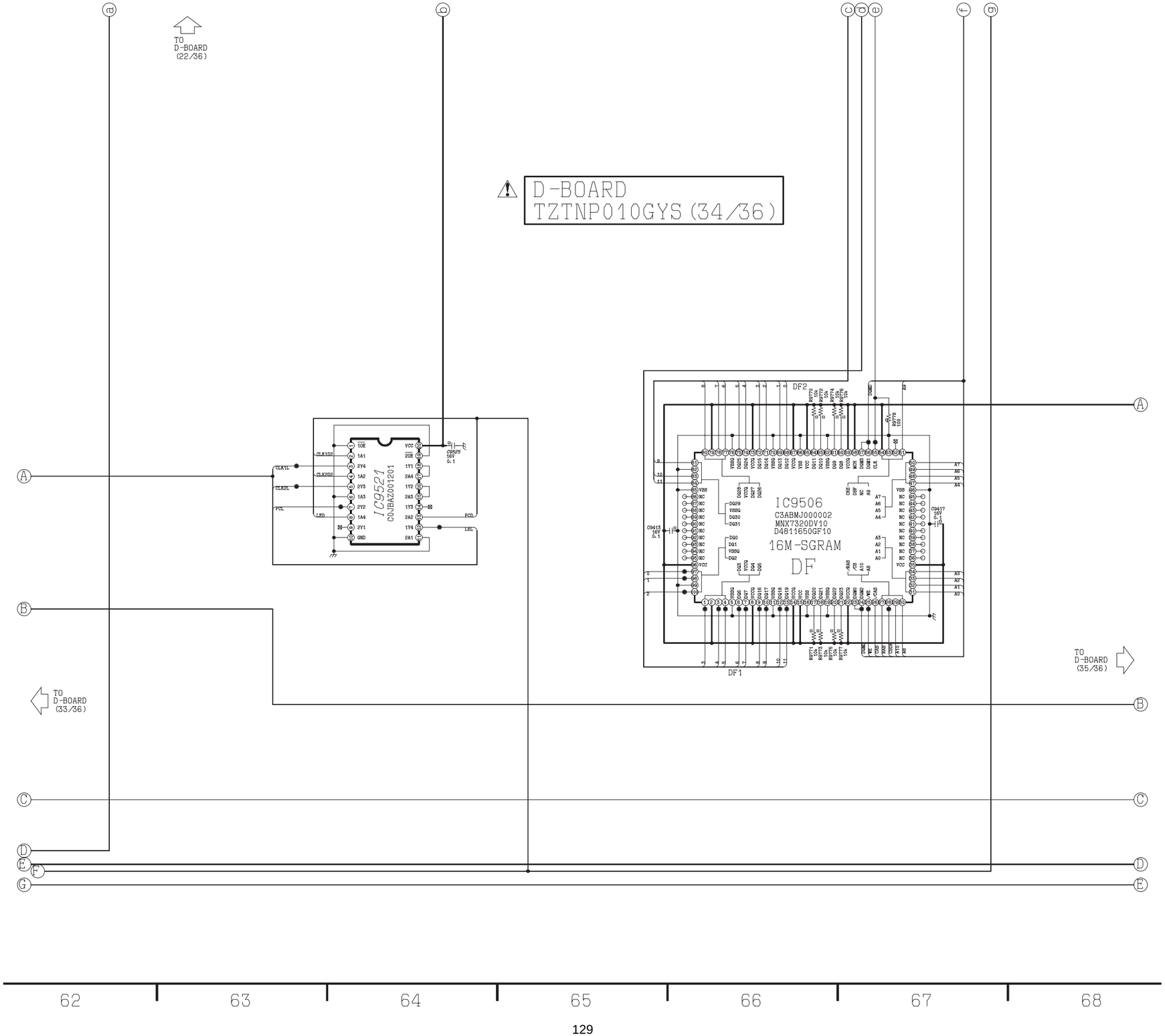
13.57. D-Board (32/36) Schematic Diagram



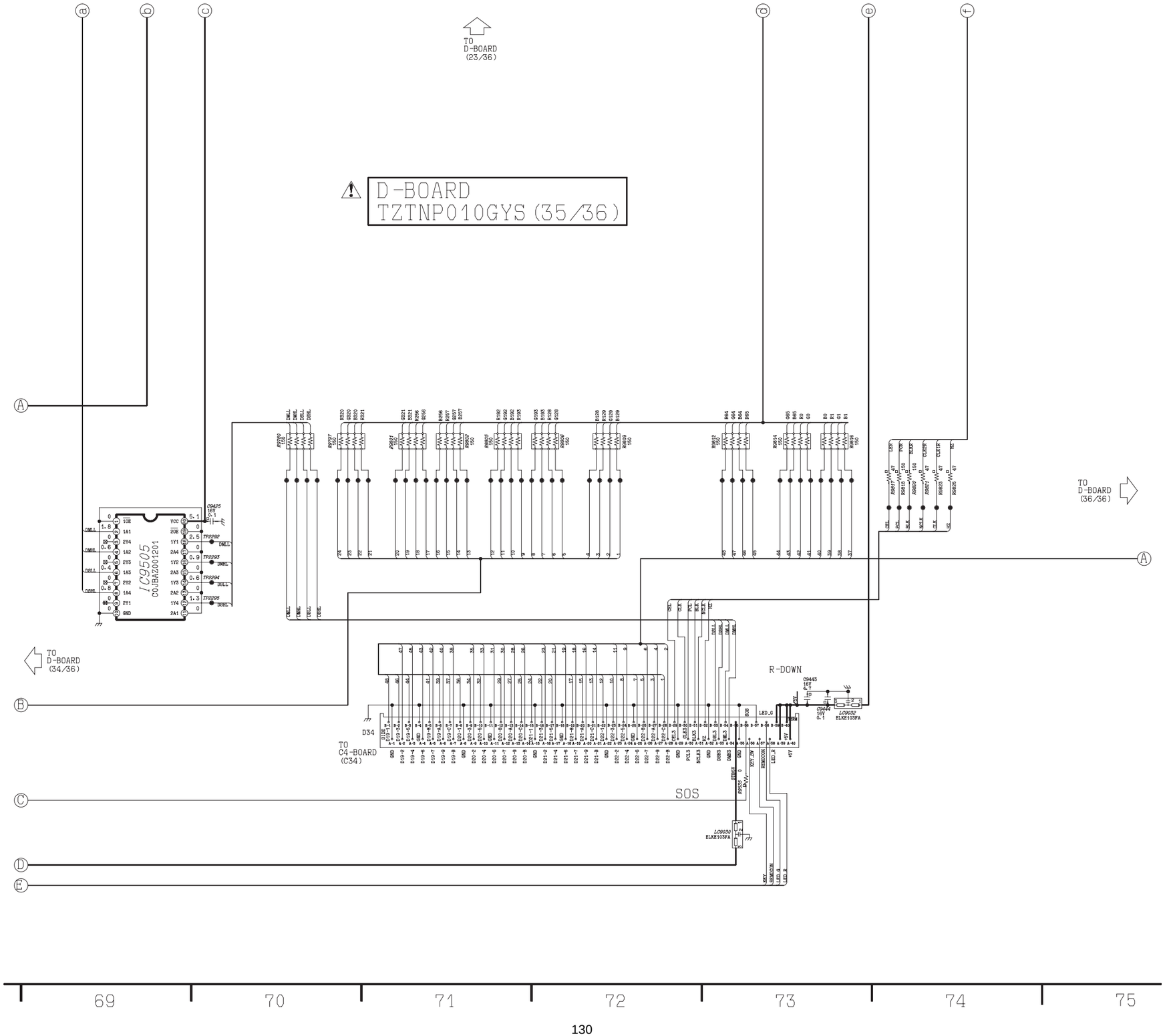
13.58. D-Board (33/36) Schematic Diagram



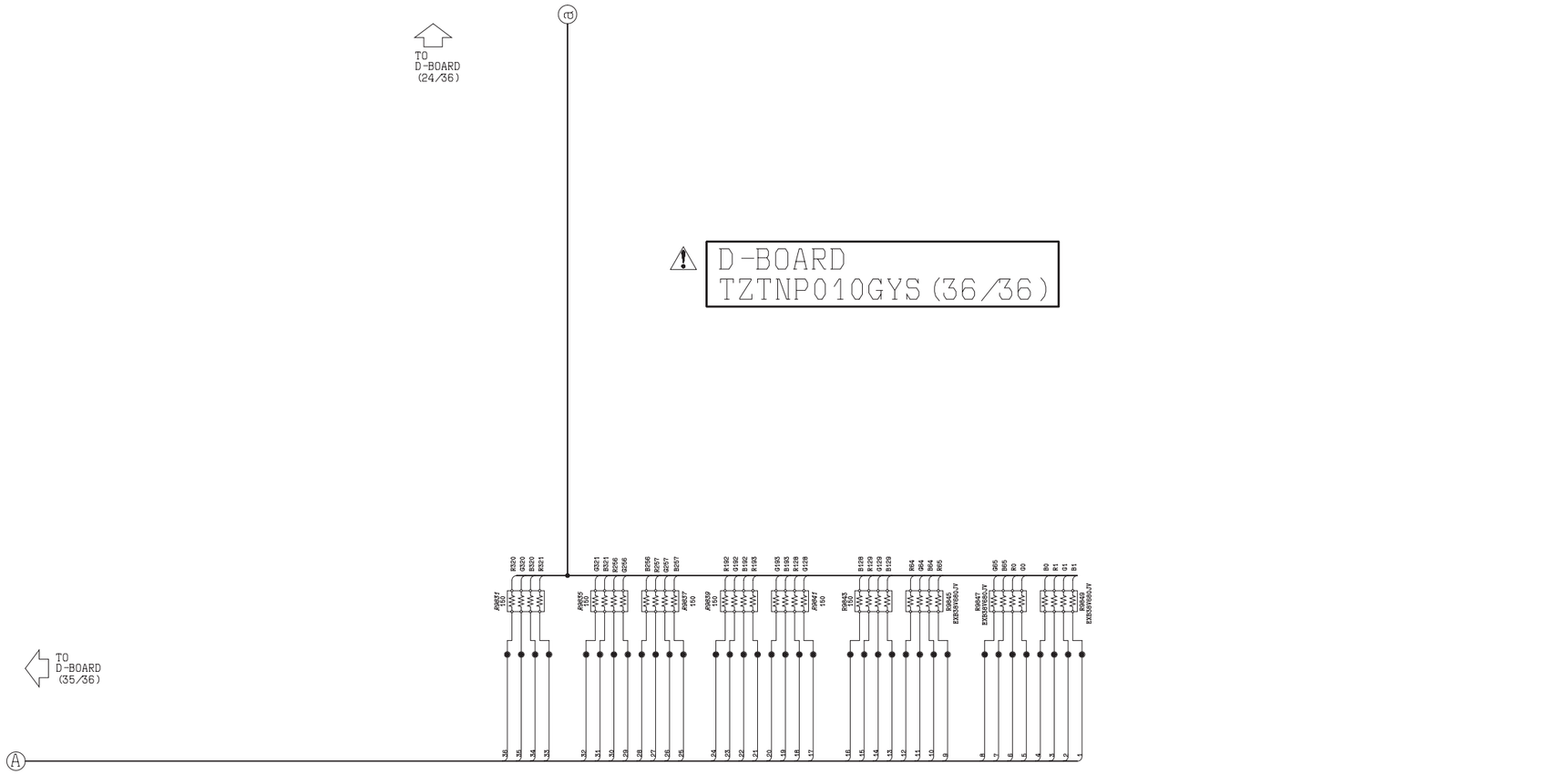
13.59. D-Board (34/36) Schematic Diagram



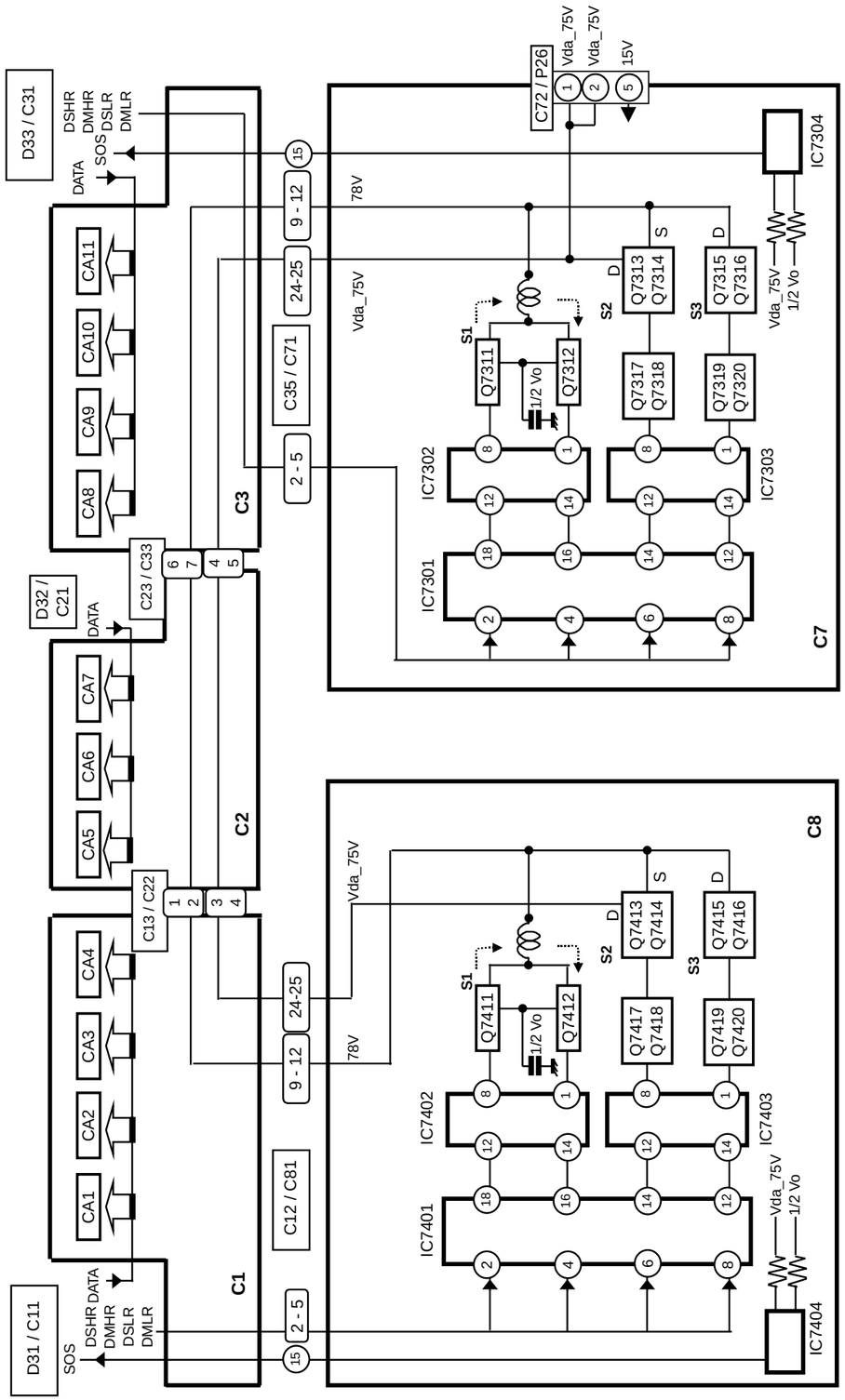
13.60. D-Board (35/36) Schematic Diagram

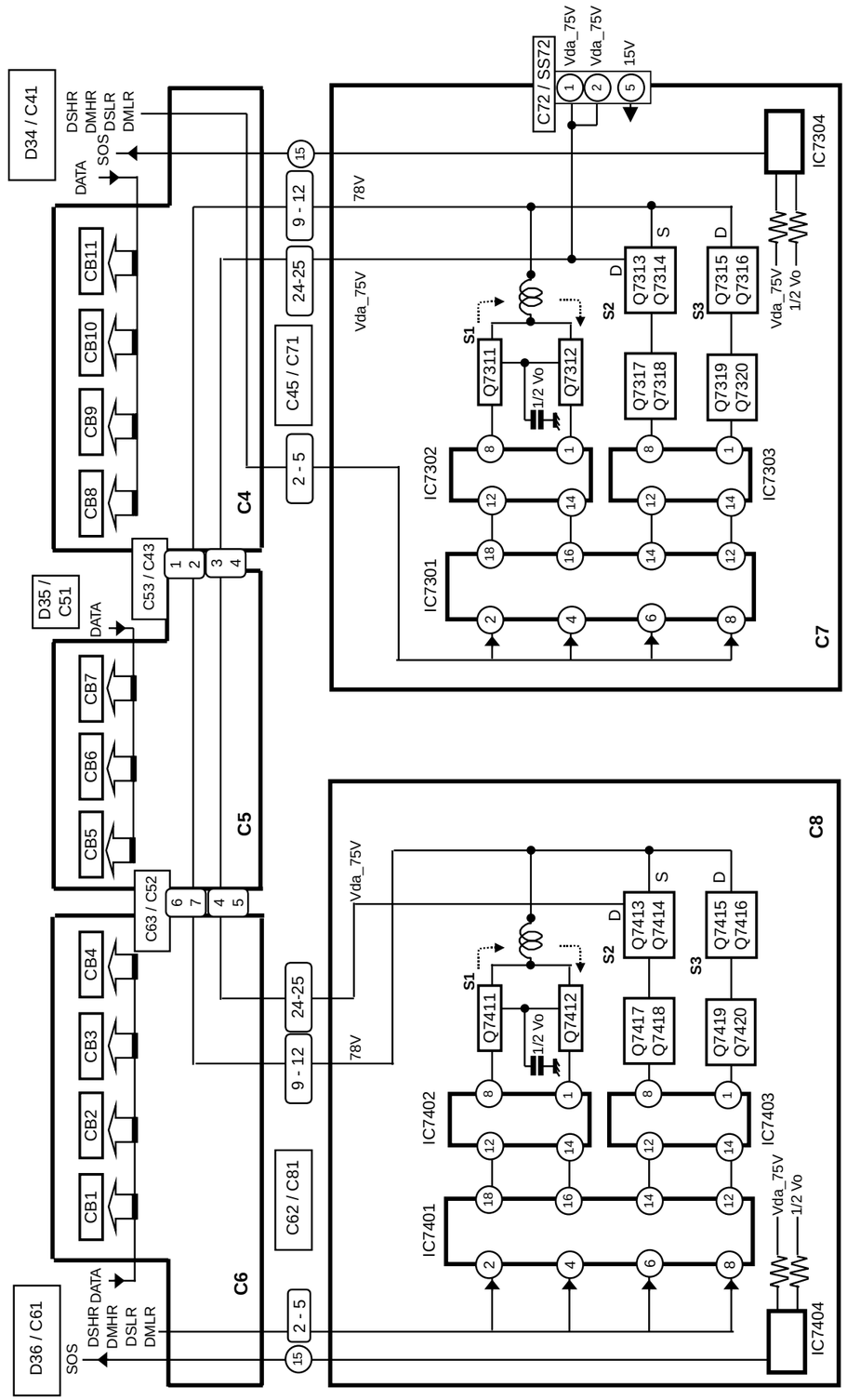


13.61. D-Board (36/36) Schematic Diagram

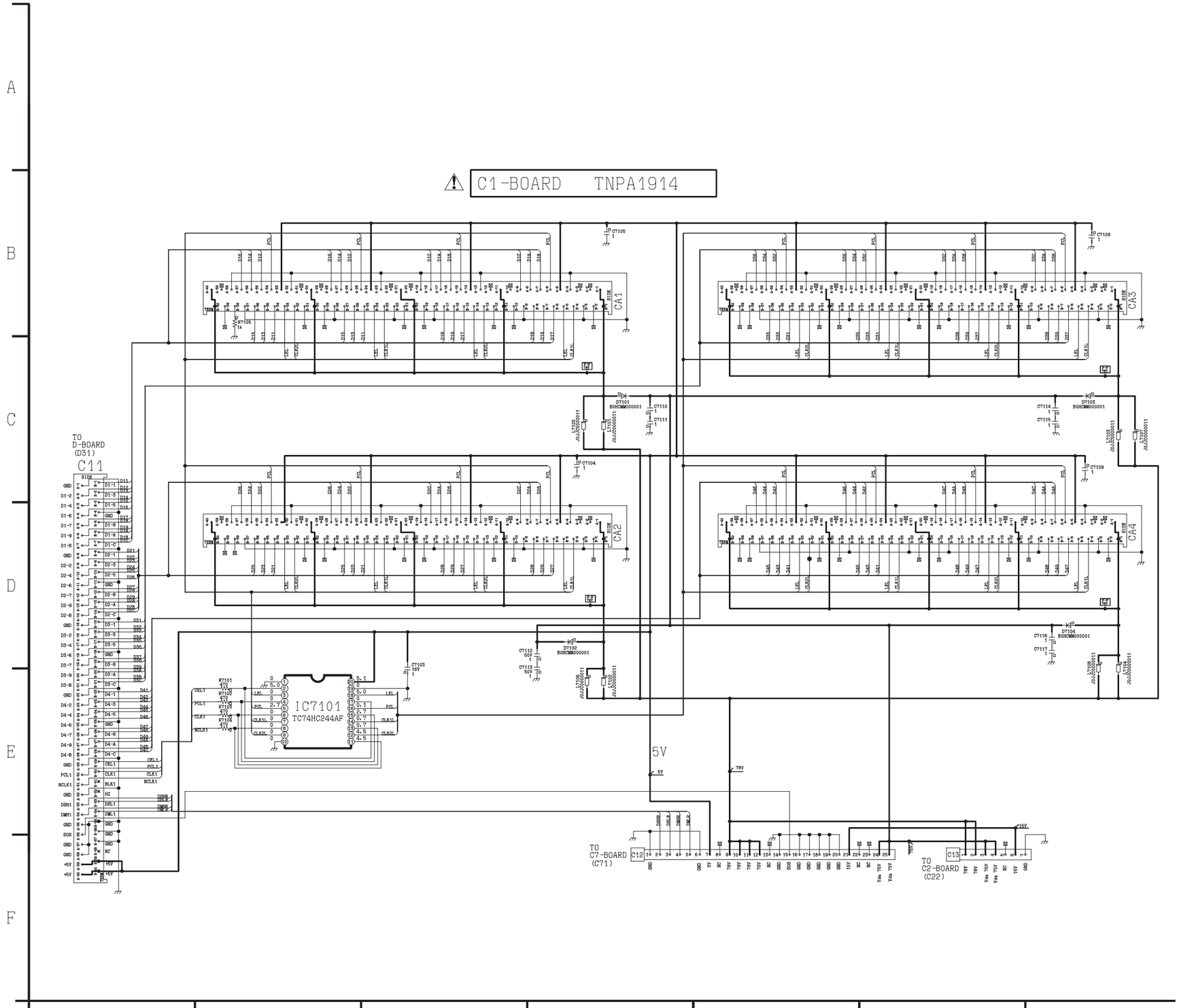


13.62. C1, C2, C3, C4, C5, C6, C7 and C8 Board Block Diagram

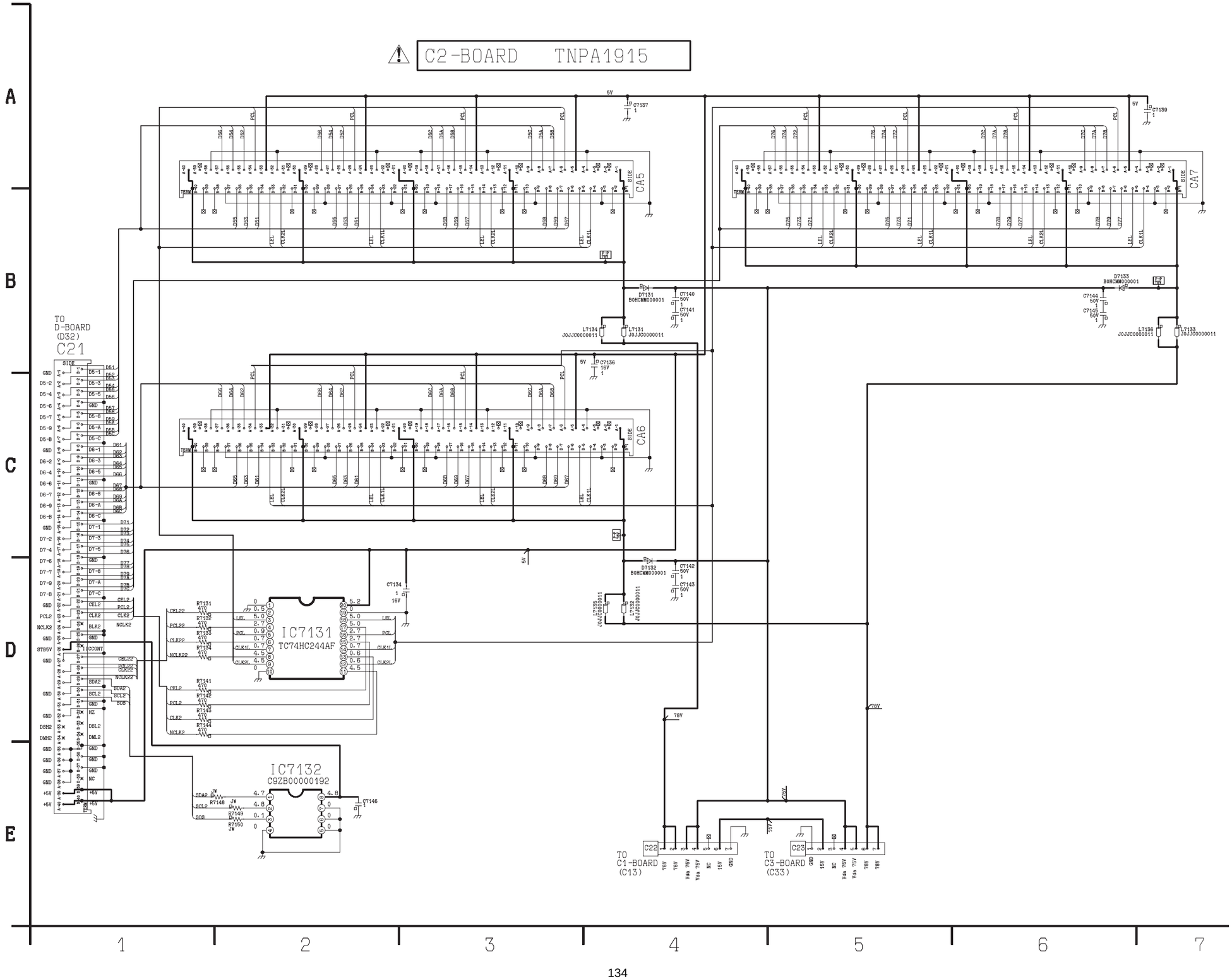




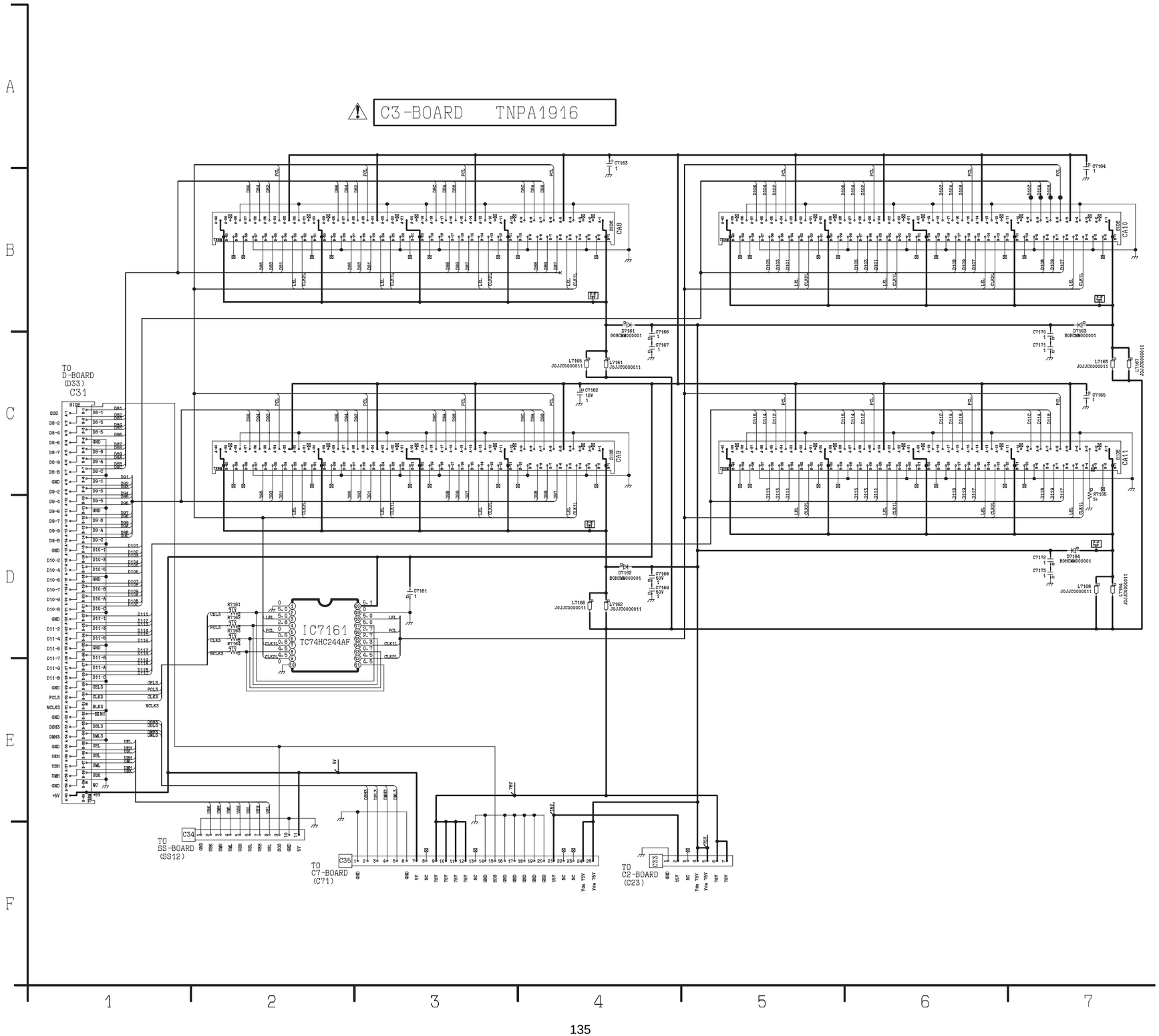
13.63. C1-Board Schematic Diagram



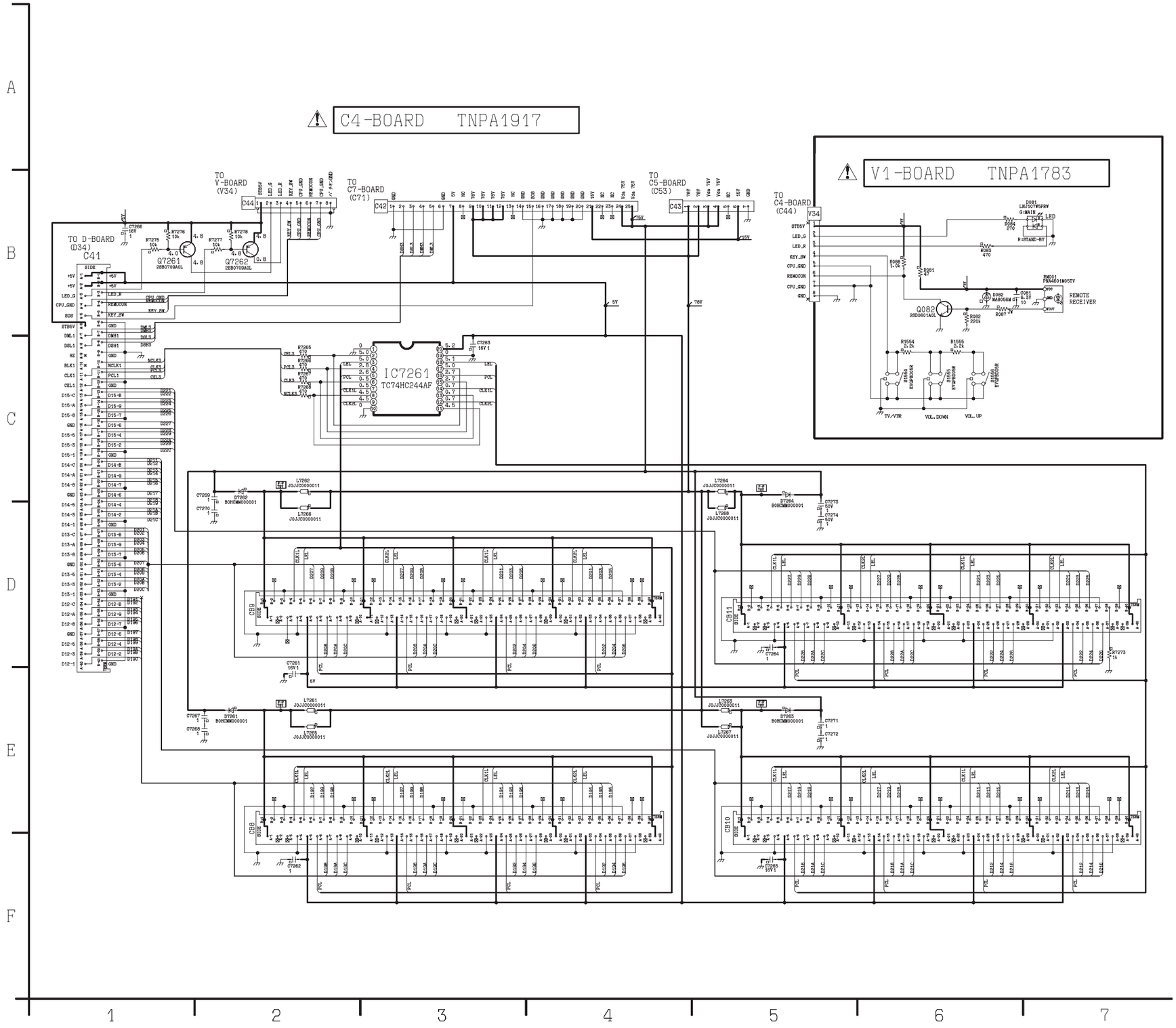
13.64. C2-Board Schematic Diagram



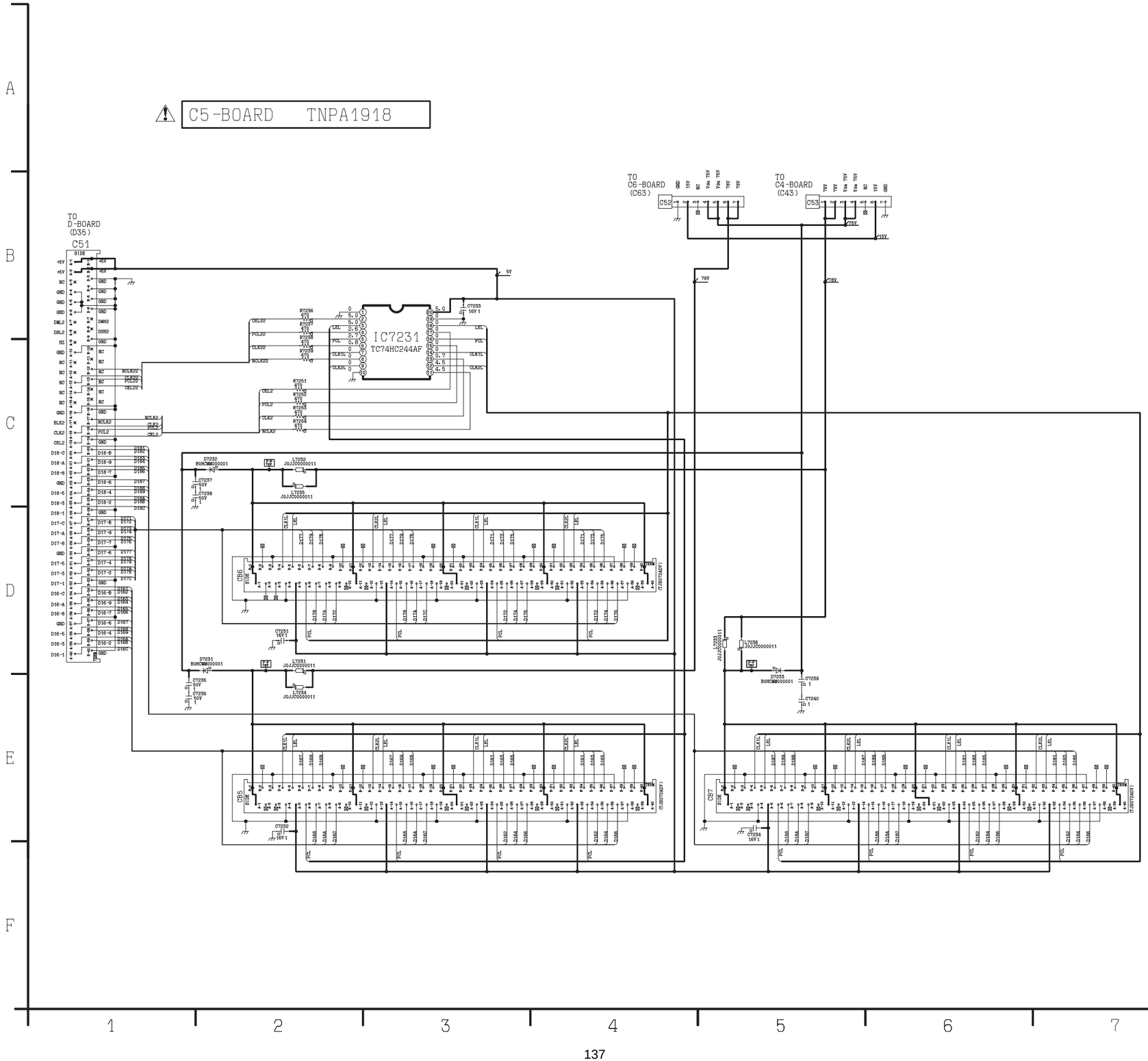
13.65. C3-Board Schematic Diagram



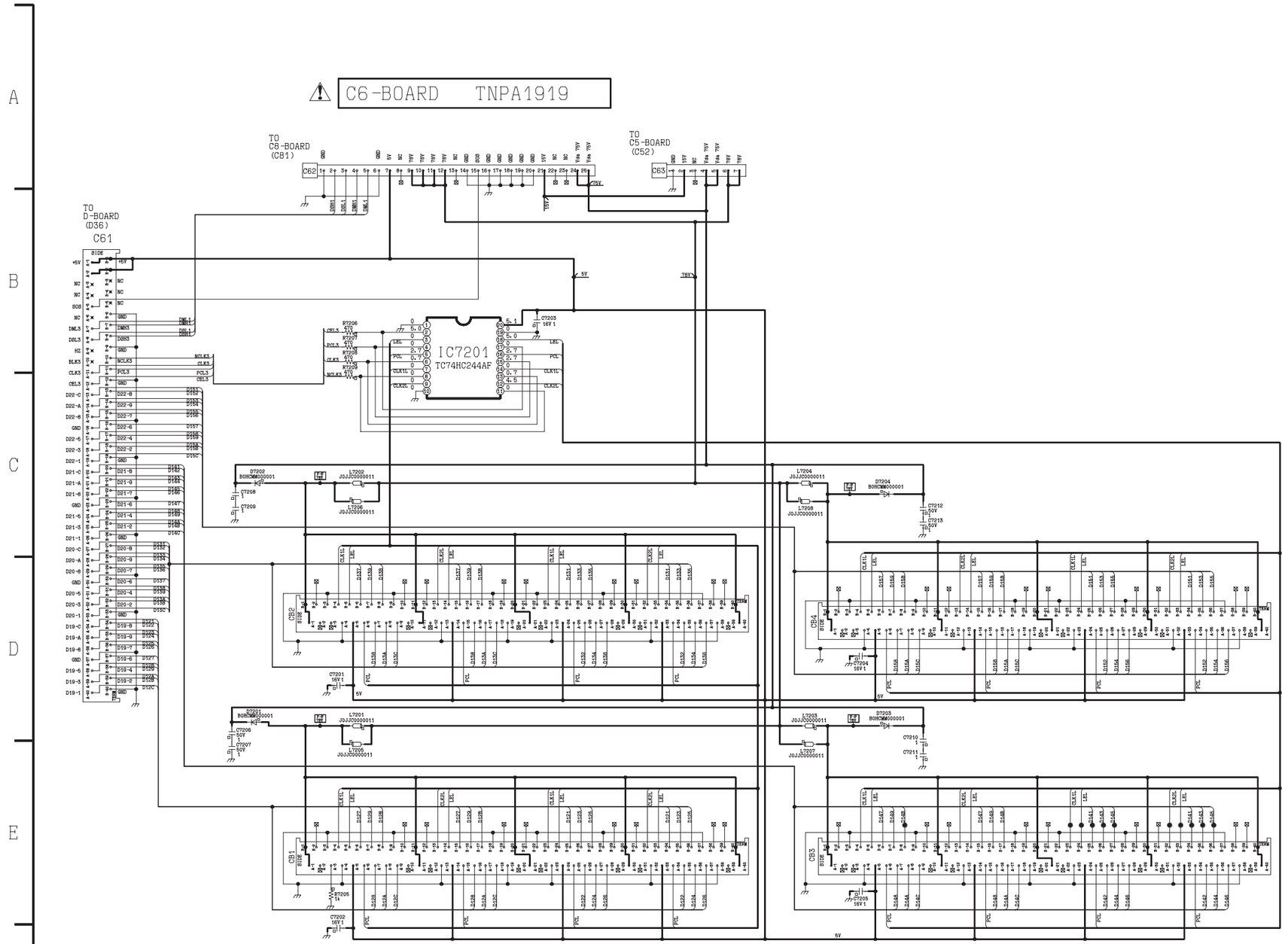
13.66. C4-Board and V1-Board Schematic Diagram



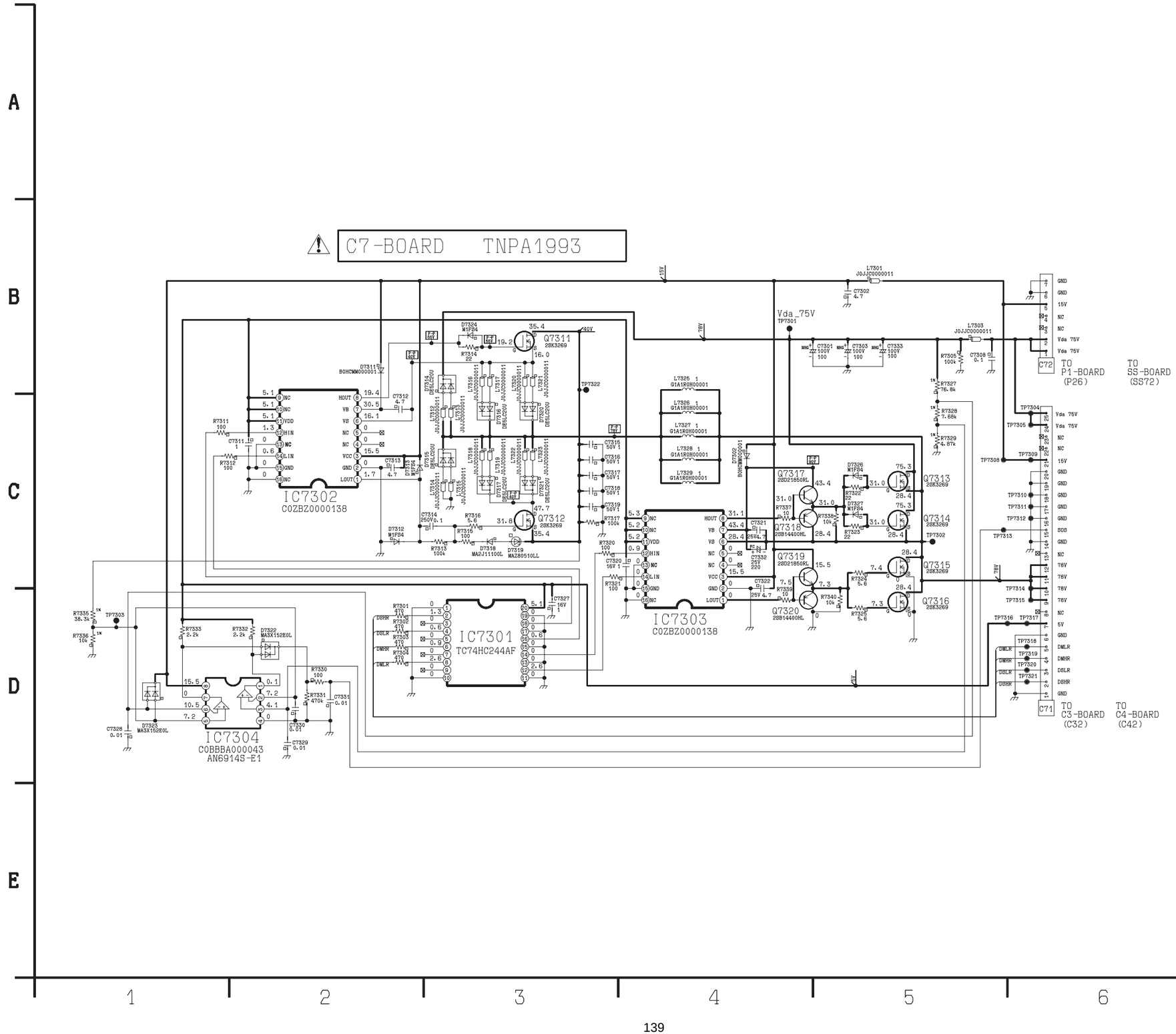
13.67. C5-Board Schematic Diagram



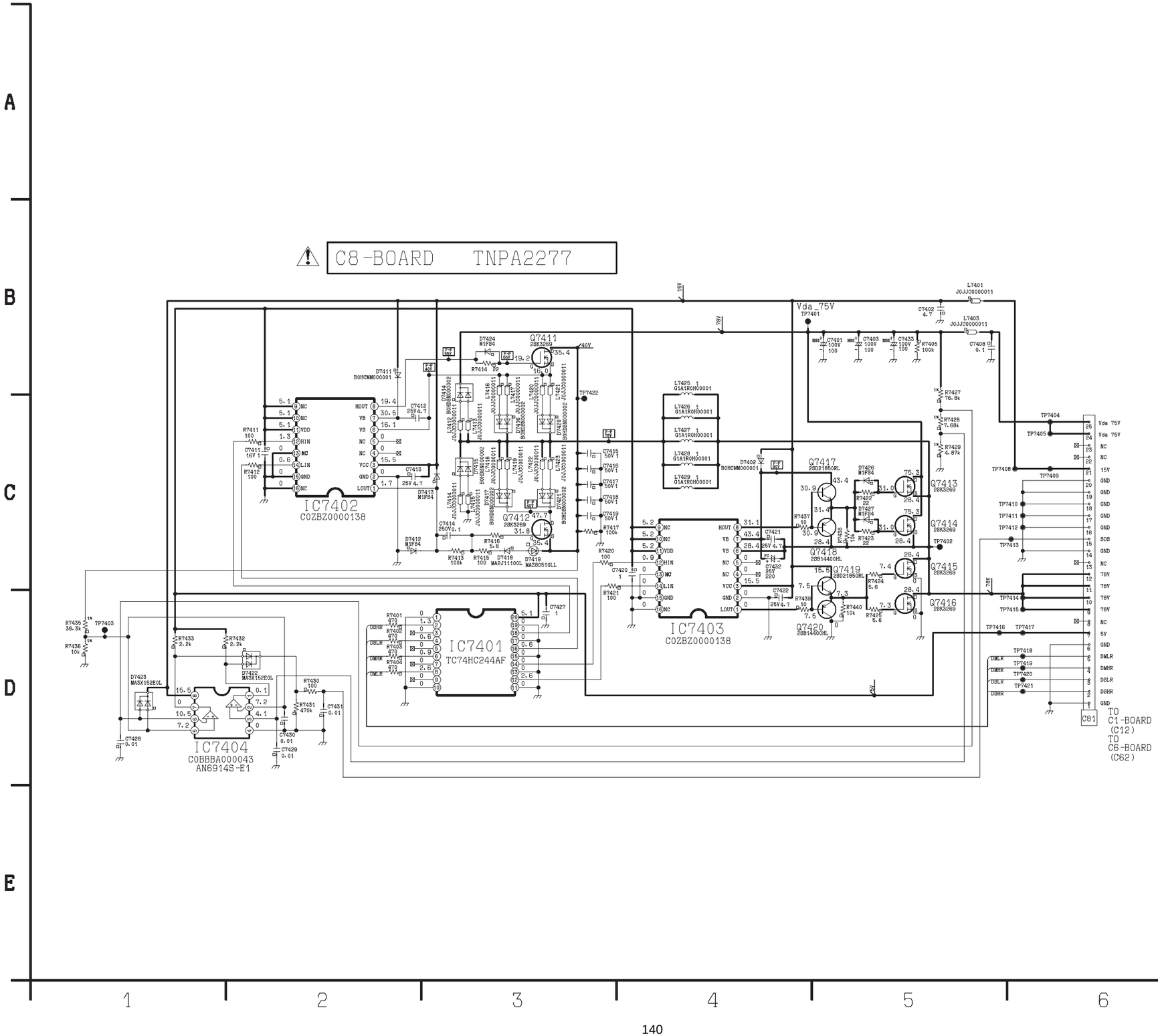
13.68. C6-Board Schematic Diagram



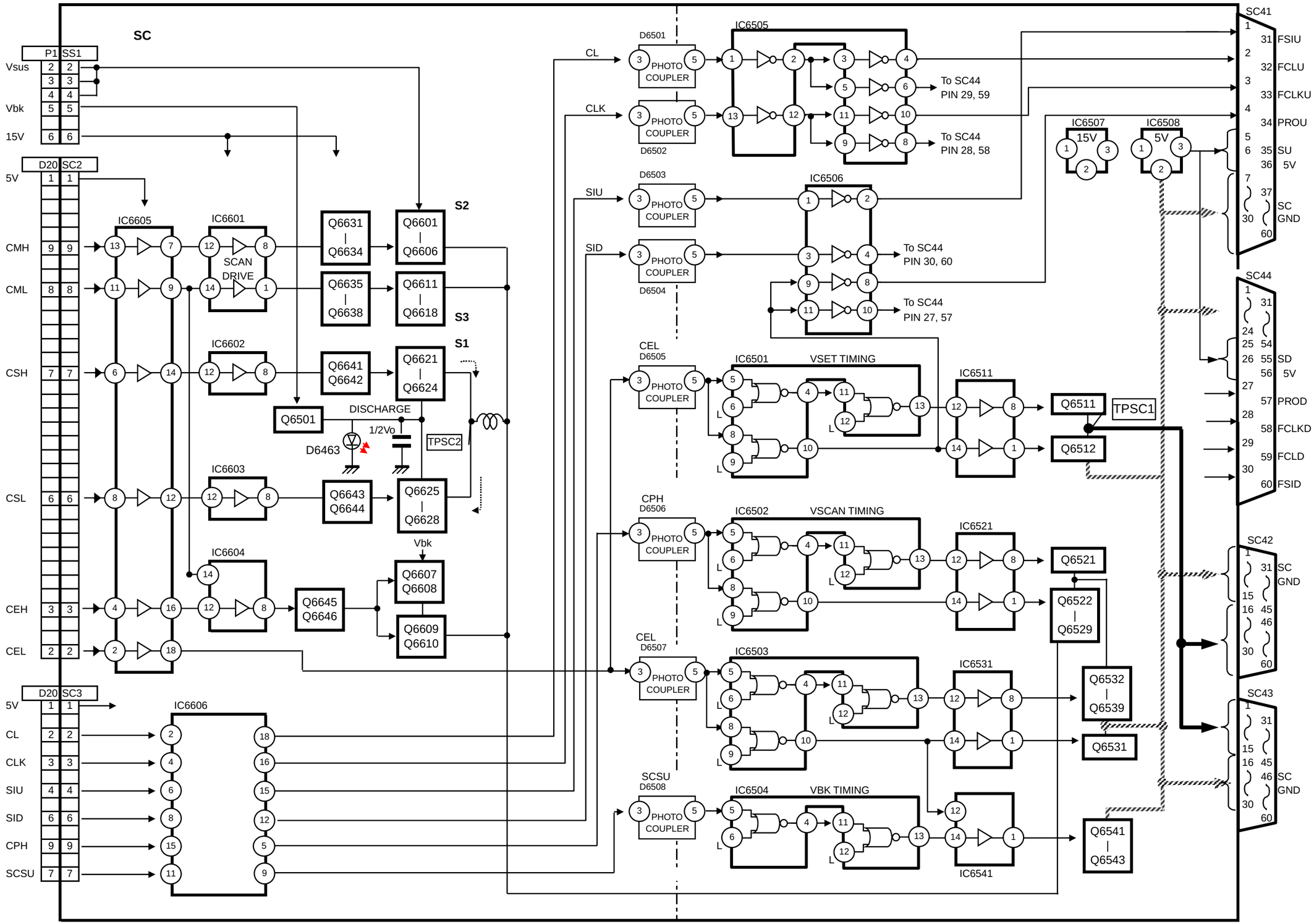
13.69. C7-Board Schematic Diagram



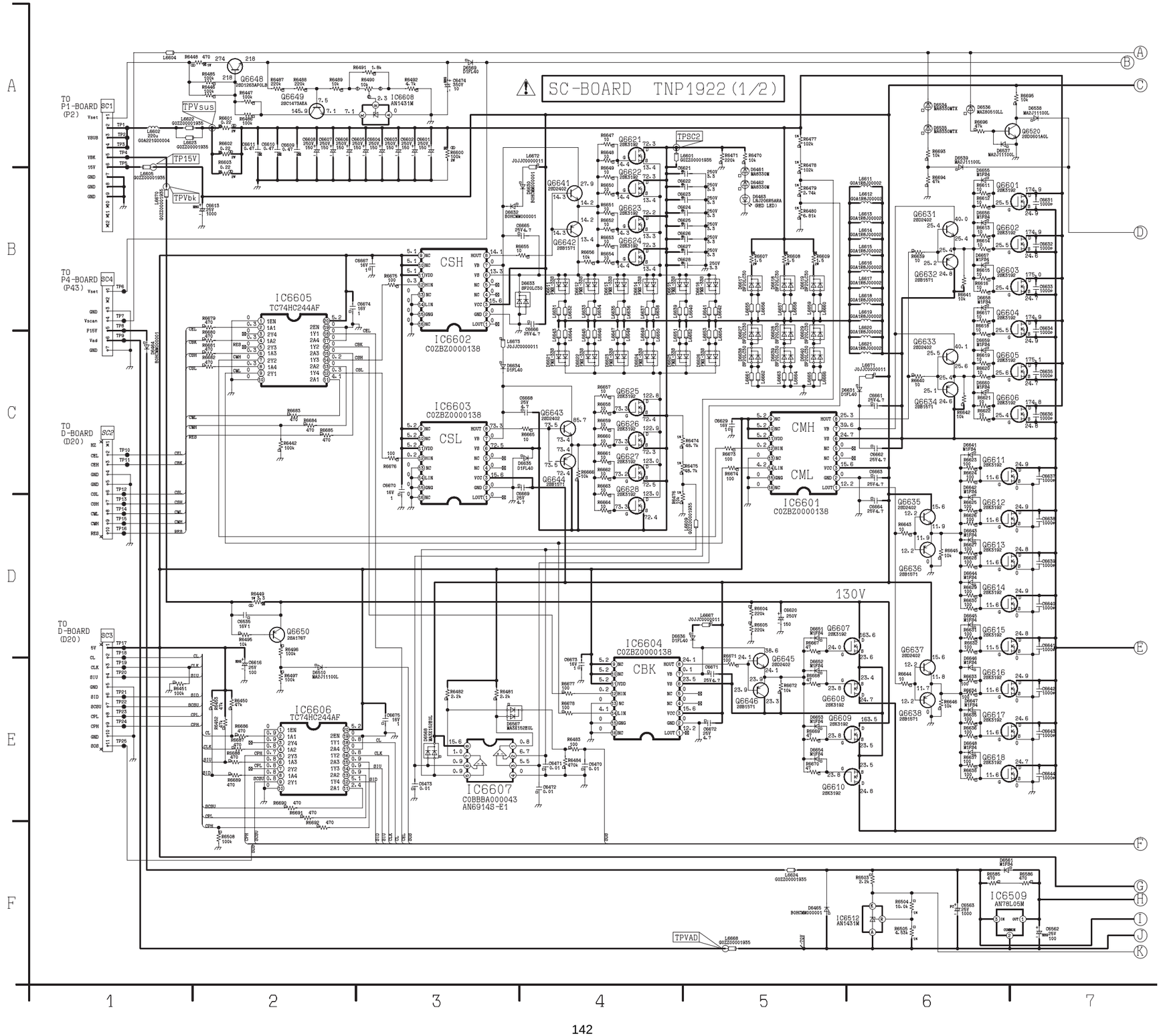
13.70. C8-Board Schematic Diagram



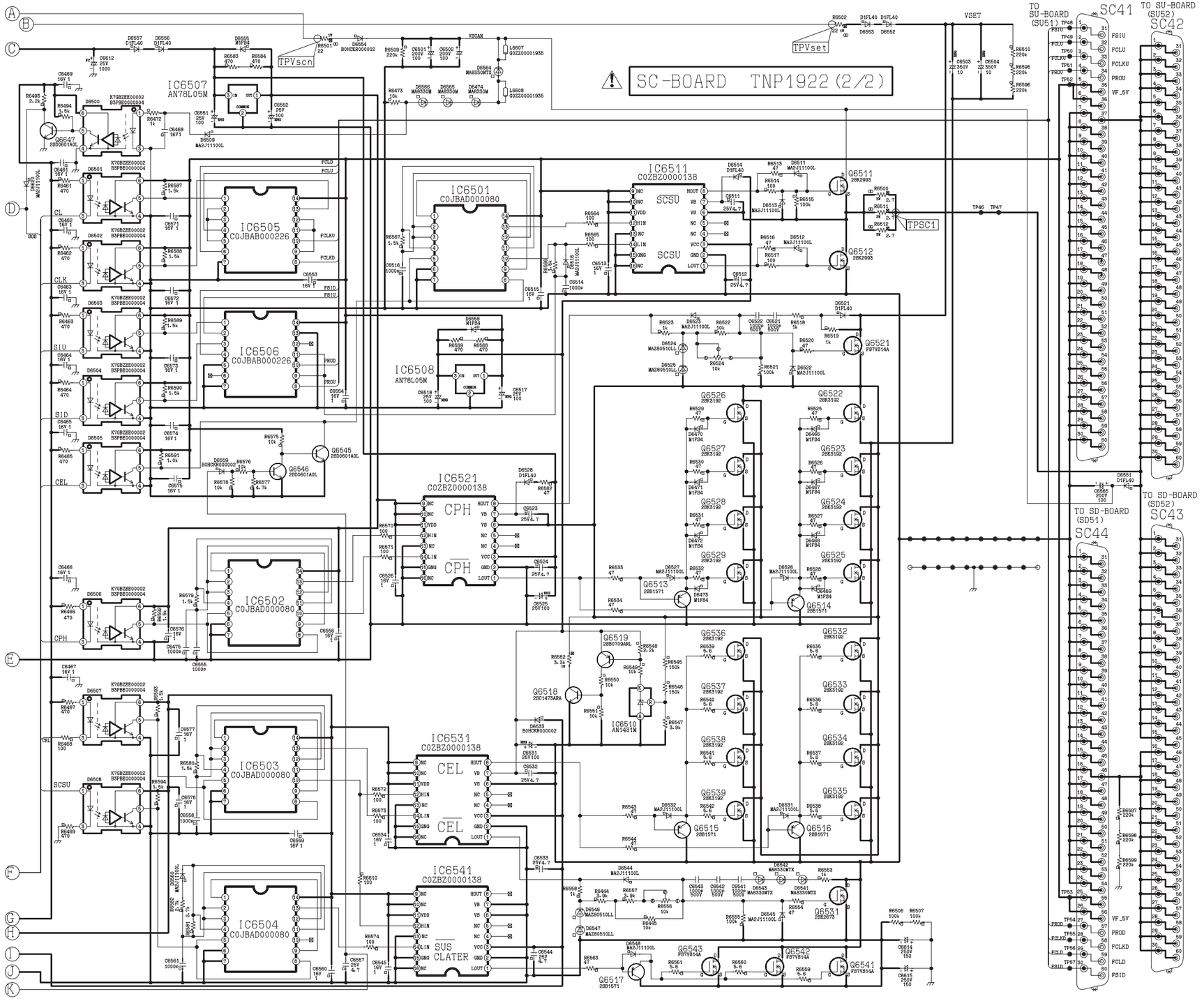
13.71. SC-Board Block Diagram



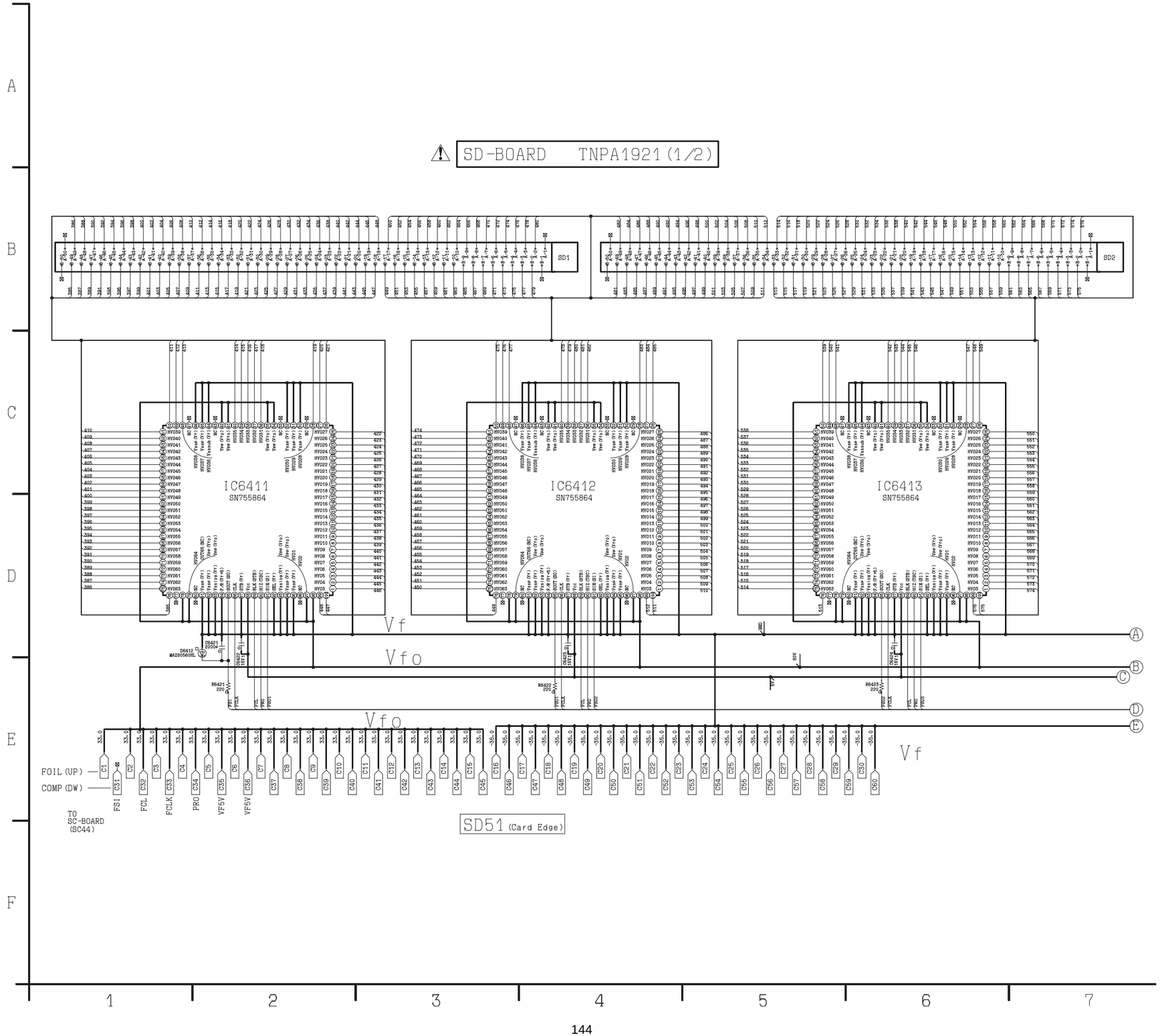
13.72. SC-Board (1/2) Schematic Diagram



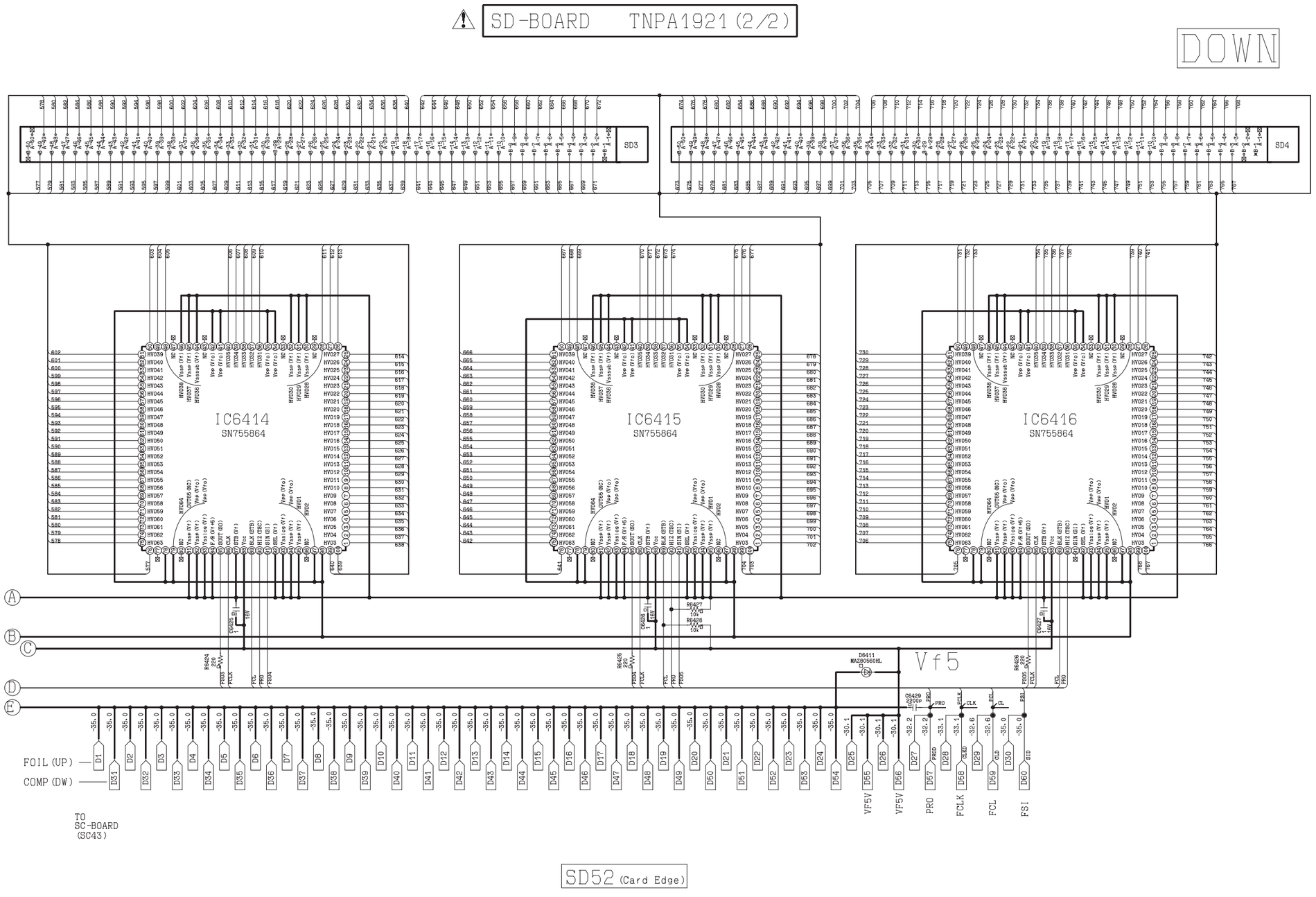
13.73. SC-Board (2/2) Schematic Diagram



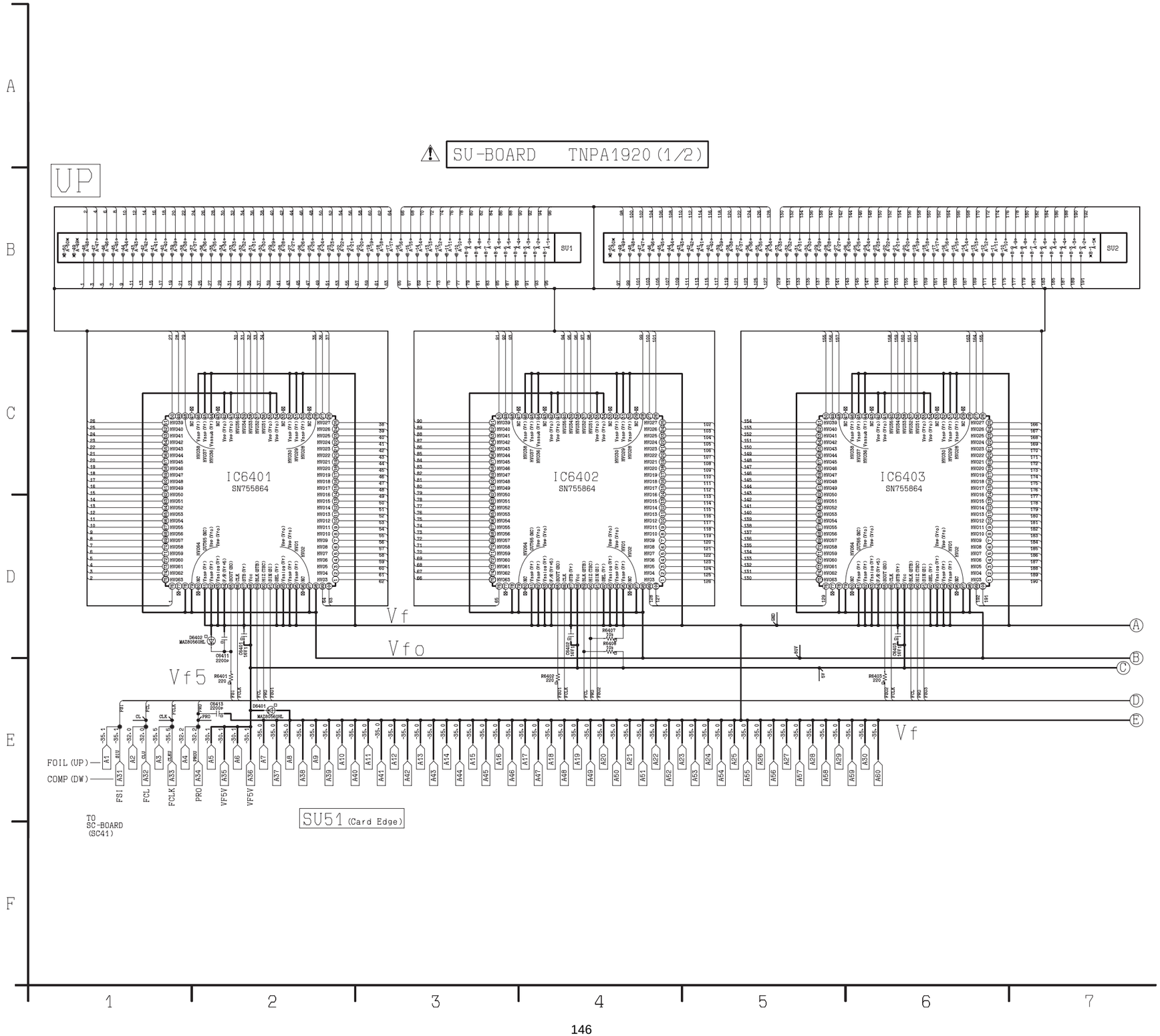
13.74. SD-Board (1/2) Schematic Diagram



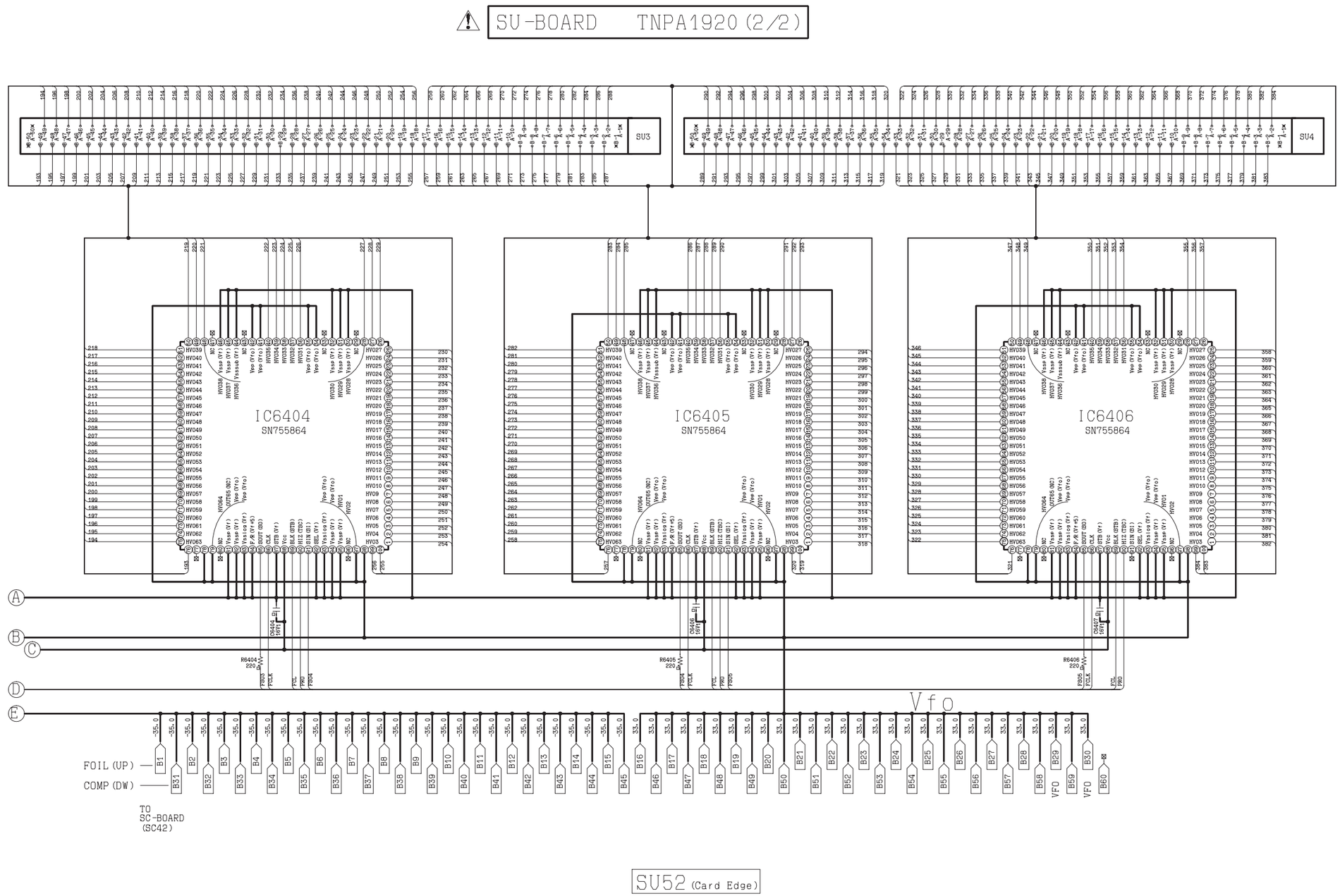
13.75. SD-Board (2/2) Schematic Diagram



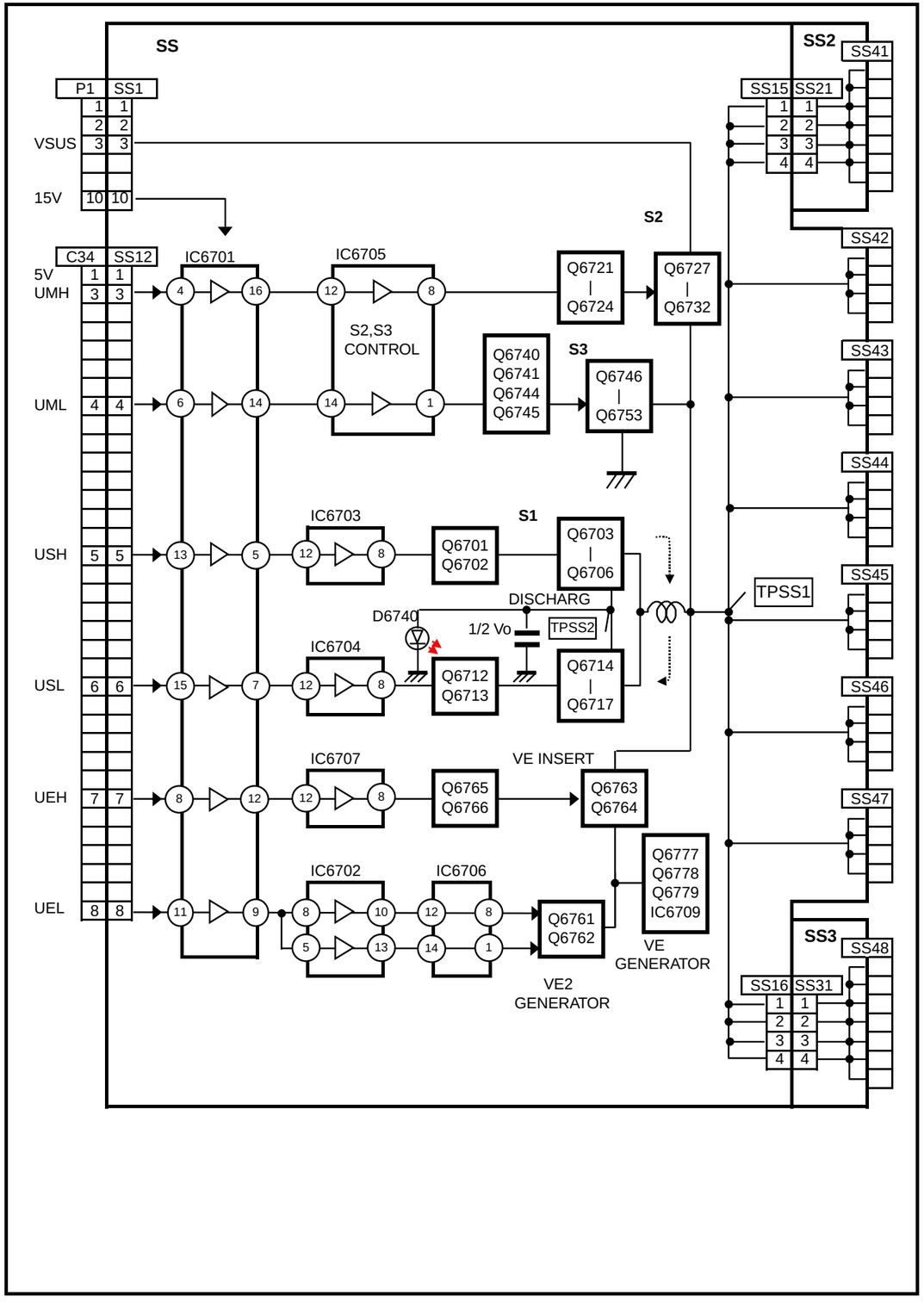
13.76. SU-Board (1/2) Schematic Diagram



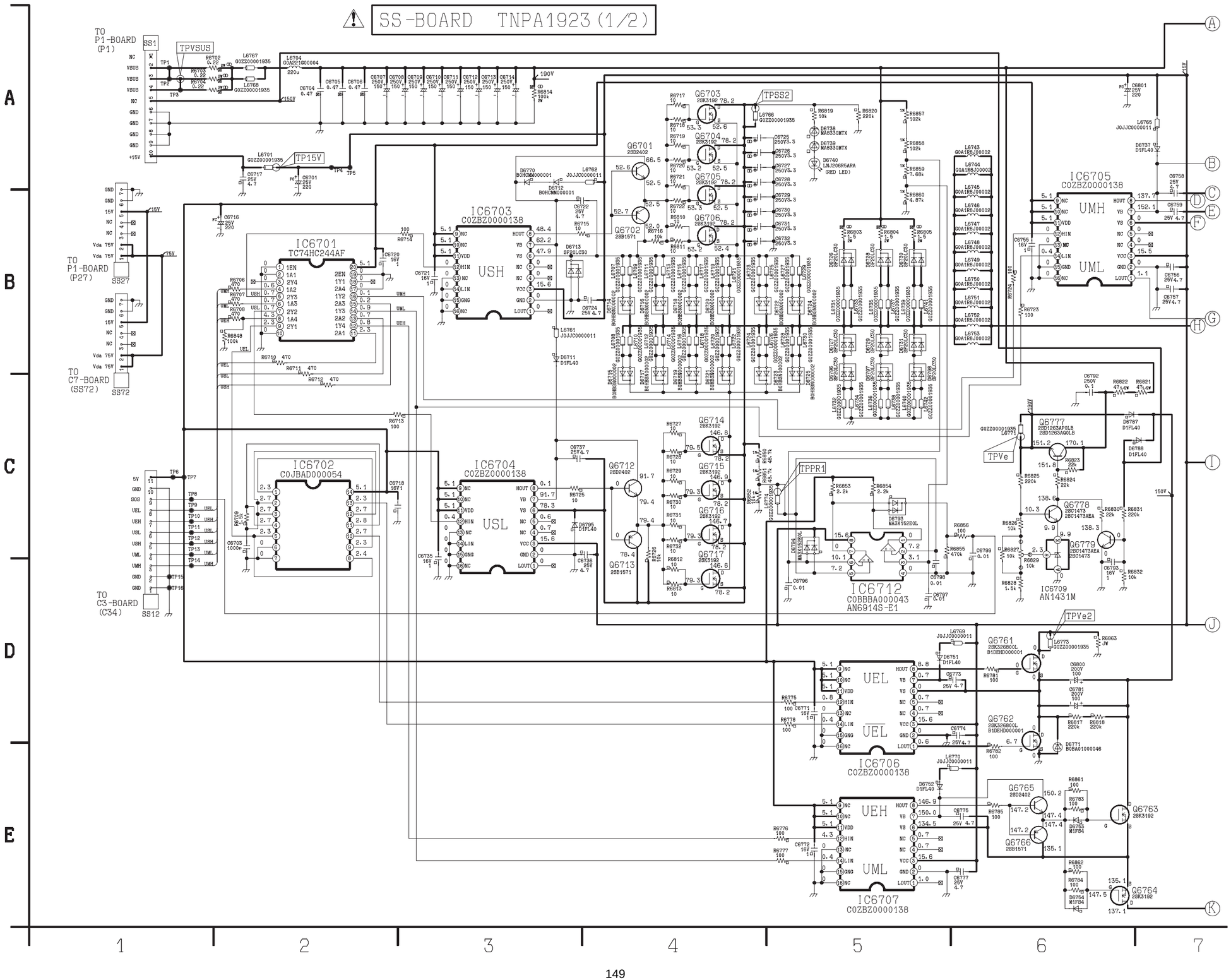
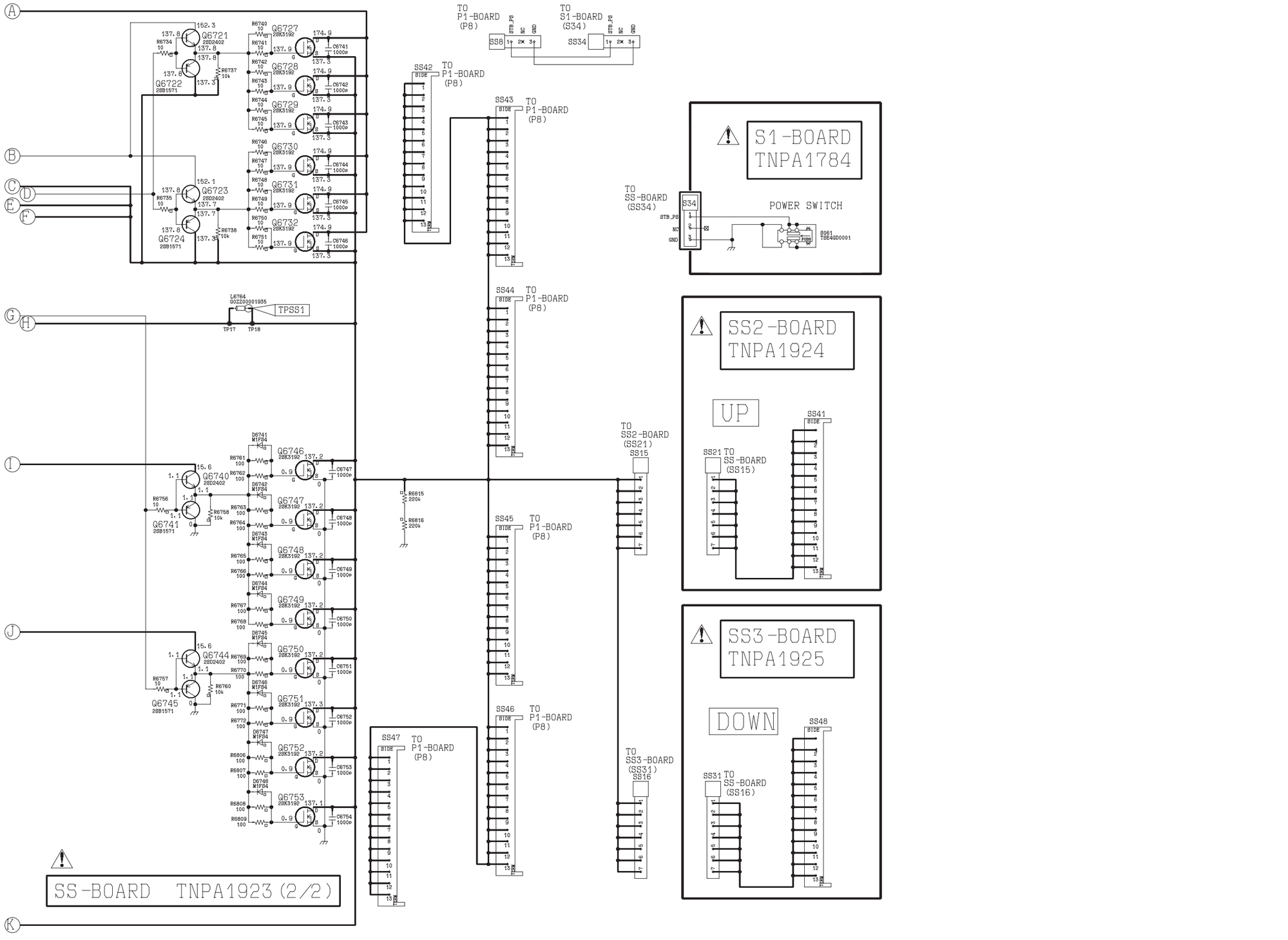
13.77. SU-Board (2/2) Schematic Diagram



13.78. SS, SS2 amd SS3 Board Block



13.79. SS-Board (1/2) Schematic Diagram



13.80. SS-Board (2/2) SS2-Board, SS3-Board and S1-Board Schematic Diagram